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ABSTRACT
In a representative cross-section of 20 Boston Standard Metropolitan Statistical Area's 120 registered hospitals, 524 individuals in 22 paramedical occupations were interviewed regarding their functions and educational backgrounds. In addition, questionnaires regarding hiring policies were directed to the adminis administrators in these hospitals. Among extensive findings were: (1) There were discrepancies between "Dictionary of Occupational Titles" job descriptions and those supplied by interviewees, (2) In only a few cases do hospitals regard as t high the entrance requirements and level of preparation encouraged by accreditin agencies and professional societies, (3) Although most hospitals indicated the basic aspects of their hiring standards have been in effect for many years, most considered these to be valid, and (4) Personnel of widely different backgrounds perform the same or similar tasks. Recommendations include: (1) re-examination b hospitals of their total occupational structures to determine job requirements, (2) establishment of relevant hiring standards, (3) expansion of on-the-job training, (4) establishment by educational institutions of realistic entrance requirements, (5) examination by local government of licensing practice in relation to exclusion of the disadvantaged, and (6) development by hospitals of promotion ladders. (JK)

HIRING STANDARDS
FOR
PARAMEDICAL MANPOWER

by
Morris A. Horowitz
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A Report To The

Manpower Administration
U.S. Department of Labor

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September 1968

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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HIRING STANDARDS FOR PARAMEDICAL MANPOWER

By MORRIS A. HOROWITZ and HAROLD M. GOLDSTEIN

and Nadine Rodwin, Research Associate

A Report To The

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PREFACE

The key objective to this pilot study was to explore the duties performed by employees in selected paramedical occupations, and the characteristics and skills that hospitals required of these employees. A second objective was to compare their hiring standards, as measured by the required education, training, and work experience, with their actual duties and functions performed on the job. The hypothesis to be tested is that the hiring standards established by hospitals are higher than needed for the duties performed, with the result that it is difficult to fill many paramedical jobs.

We obtained the basic information through structured questionnaires and interviews with administrators, personnel directors, and employees of a stratified sample of hospitals in the Greater Boston Area. We succeeded in gathering detailed data on hiring requirements for each of the selected paramedical occupations and on the actual job performance of employees, as well as their professional and educational background. We also collected information on certain general characteristics of the occupations, such as promotional possibilities, training on the job, and the importance of professional certification.

We are indebted to a large number of individuals for assistance in gathering the required statistics and completing this study. All the hospitals included in this study were cooperative. These hospitals, along with our direct contacts in the hospitals, are listed below. Many personnel

administrators and directors gave freely of their time and went out of their way to help us schedule interviews conveniently.

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We alone bear all the responsibility for the complete study, including all views and judgments expressed.

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CONCLUSIONS AND RECOMMENDATIONS

The conclusions and recommendations in this section are based upon the findings of our current pilot study of paramedical manpower. This pilot study has certain limitations which should be recognized. The study was conducted in the Greater Boston Area, and the medical and paramedical problems here may differ significantly from those in other parts of the United States. Our sample covered only 524 workers in 22 paramedical occupations, and these may not be statistically representative of all paramedical manpower occupations. Interviews were conducted in 20 hospitals stratified by size and type, but such a distribution of medical facilities may not be representative of hospitals in smaller communities, or in other large cities. Despite these caveats, the authors feel that a number of generalizations are warranted, even though each conclusion or recommendation may not have universal applicability.

General Conclusions and Recommendations

The description in the U.S. Department of Labor, Dictionary of Occupational Titles, 1965 edition, of the job and functions of the paramedical occupations studied was found to be incomplete and frequently in error. Our study developed and tested a list of functions for each of the 22 paramedical occupations, and we obtained a distribution of work time spent on each function by each person in our sample. These job descriptions and listings of functions can be used as reliable guides for further study of the education and training needs in the paramedical occupations.

The hiring-in standards of most occupations are generally established by the hospitals, either on a department basis or a general administrative basis. Accrediting agencies and professional societies have some influence over entrance requirements in some paramedical occupations, and they continue to press for additional professional and educational preparation. In line with this pressure, universities, colleges and other educational institutions offer paramedical training programs but they have established entrance requirements too high to permit matriculation by the educationally deprived. In very few cases do hospitals regard as too high the standards recommended by the accrediting agencies and professional societies. Most hospitals indicated that the basic aspects of their hiring standards were in effect for many years, some over 10 years. And despite this, most considered their hiring standards to be just right, even though, the job content of a number of occupations had changed and there was a general shortage in most occupations. In view of these findings and conclusions we recommend the following:

1. Hospitals should reexamine their whole paramedical occupational structure, to determine the job requirements of each occupation.

2. Hospitals should establish hiring-in standards that are relevant to the functions to be performed by the occupation; arbitrary licensing and educational requirements that are not needed for satisfactory performance should be eliminated.

3. Where relevant, hospitals should expand their on-the-job training programs for more of the paramedical occupations, and workers should be trained in the functions significant to the occupation.

4. The educational establishment, including universities, colleges, public school systems, and teaching hospitals should offer training programs for the various paramedical occupations with entrance requirements geared to basic and realistic needs of the occupation. This would grant many educationally deprived persons an opportunity to enter such programs.

5. The Government should reorient its MDTA training programs for various paramedical occupations in line with the specific job requirements established by the hospitals. More such courses should be offered, with a concerted drive to attract disadvantaged workers and school dropouts.

6. The Government (local) should examine the whole practice of licensing of various paramedical occupations, a practice which has tended to exclude disadvantaged and school dropouts by means of arbitrary and unnecessary qualifications.

Our findings indicate that widespread shortages exist in many paramedical occupations. The findings also indicate that personnel of widely different educational and professional backgrounds are employed to perform the same or similar paramedical tasks. We conclude from this that in a number of paramedical occupations, persons with considerably less than the current average of education and professional training can and do perform the work satisfactorily. We therefore recommend the following:

7. Hospitals should coordinate their hiring standards at some minimum which will still provide the needed quality of service while utilizing a greater proportion of disadvantaged persons. This may help eliminate the manpower shortage.

8. Wherever possible hospitals should develop a job promotion ladder, with the necessary training furnished on the job. Thus, by eliminating dead end jobs and creating promotion opportunities, hospitals will attract better personnel and reduce attrition.

Specific Conclusions and Recommendations

In our analysis of 22 paramedical occupations we found considerable similarities between various pairs. In some cases the differences in functions were slight, but the hiring-in standards differed significantly. Some hospitals used a single generic job title, with specific job duties while other hospitals used two titles to perform the same duties. Frequently, broad differences in hiring-in standards could not be justified by minor differences in the functions actually performed.

There is considerable overlap in the functions performed by Licensed Practical Nurses and Nurses Aides. There are eight functions on which NAs spend an average of 80 percent of their time; LPNs spend an average of 63.5 percent of their time on these same functions. The LPN is typically exposed to 15 months or more of formal professional training after high school, whereas the Aide receives only a few weeks of informal, on-the-job training in many cases with no, or incomplete, high school background.

In only a relatively few instances did we find Therapists being assisted by Therapy Aides. Where they existed, Therapy Aides with far less education and training assisted the Physical Therapists in many of the latter's functions. No explanation could be given why more Aides were not employed or why such Aides were not used in therapy work, other than physical therapy.

Our findings showed only a slight if any differences between the Laboratory Technologist and the Laboratory Technician; in general, the distribution of their work time among the different functions was about the same. However, the Technologist is required to have considerably more education and training than the Technician who is performing adequately at the same or similar tasks.

The Medical Social Workers and Aides employed by hospitals are highly trained in their professional field, but a substantial portion of their time is spent on paperwork and work not necessarily dependent upon their professional and educational background. Our findings indicate that many of their duties probably could be performed equally as well by individuals with considerably less education and professional training.

A good deal of similarity was found in the educational background of the X-Ray Technician, EKG, EEG, and Inhalation Therapy employees. Although professional training for these occupations varies from several months to 24 months, their formal training runs along similar lines. Few have any years of college, and a significant number have less than four years of a high school education. These are rapidly growing paramedical occupations, and the opportunities for the disadvantaged in these occupations can be great.

The findings show that Dietitians and their Aides have divided their duties in a fashion which employs the talents of both groups. The Dietitians spend most of their time on high-order functions, which utilize their education and professional training; the lesser educated and trained Aides spend the greatest percentage of their time on a lower level of duties.

The U.S. Navy appears to be very successful in training their medical corpsmen in a shorter period than the civilian training and educational institutions. In addition, the education requirements are less restrictive.

For example, the Navy trains an X-Ray Technician in 12 months, while the hospitals in the sample require 24 months of training. The Navy trains EEG Technicians in four months, while the civilian hospitals require anywhere from 7 to 12 months of training. The Navy trains all of its corpsmen in a 16 week basic course and then requires the Laboratory Assistants to take 12 additional weeks of training (a total of less than seven months). All of the civilian hospitals included in this sample require 12 to 16 months of training for the Laboratory Assistants. A high school diploma is not required by the Navy, but is demanded by all the other hospitals included in this sample.

Our findings seem to indicate that Navy-trained technicians are highly qualified and readily employed by the civilian hospitals. Approximately 85 percent of the Navy-trained laboratory personnel of the U.S. Navy Hospital (Chelsea) are moonlighting in civilian hospitals.

In view of the above findings, we recommend the following:

1. Hospitals should restructure the functions of various occupations, making better use of the skills acquired by greater amounts of education and training. This would increase the need for persons with less education and less training who could, over time, be trained on the job for the higher-rated occupations.

2. Hospitals should make greater use of Aides and Assistants, many of whom can be trained on-the-job to perform satisfactorily, even if not a high school graduate.

3. Hospital administrators should set hiring-in standards that are in line with the actual job duties and functions required of the occupation.

Research Recommendations

As in most research projects many new questions and new avenues of inquiry came to the fore. While some questions that were in our focus of study were answered, others were not. Based upon our findings and our lack of findings in some areas, we recommend further research in the following broad fields.

1. The government is sponsoring various MDTA training programs for a number of paramedical occupations. Some of these programs have been effective, but others have not. We recommend that research be undertaken to evaluate the current programs to analyze the reasons for success and failure and to determine the needed avenues of expansion of such programs.

2. While we have recommended greater use of the disadvantaged and the school dropout in paramedical occupations, we have skirted the issue of quality -- quality of work performed as well as quality level of the service required by the hospital. We recommend that further research be undertaken in this area to determine the quality of work performed by the educationally deprived compared with (1) the quality of work of others, and (2) the quality level of service required of the hospital.

3. Our research looked into the education and training attainment of paramedical personnel, as well as the requirements by hospital administrators. Further research is needed to determine the minimum requirements of education and training to perform the duties of the occupation satisfactorily.

4. Our findings indicated that the Navy Hospital trains paramedical personnel with lower educational requirements and in less training time than civilian hospitals. We recommend that research be undertaken to determine how the Navy training programs function and how they can be applied to training of paramedical personnel in civilian programs.

INTRODUCTION

The health services industry employs close to three million persons in hospitals, clinics, private offices, laboratories, and other dispensaries of health services. An additional one million persons work in occupations or industries closely related, in some way, to health services. These four million health service workers represent about five percent of the labor force in the United States.

From 1955 to 1965 the population increased by 17 percent and the number of active physicians increased by 32 percent, but these increases were outstripped by the tremendous increases in paramedical personnel. For example, professional nurses in practice increased by 44 percent, registered X-Ray Technicians increased by 56 percent, and clinical laboratory personnel by 70 percent. Other health services also increased rapidly and there was a 65 percent increase in general hospital services.

Despite this remarkable growth in the scope and quantity of health services provided the general public, the manpower supply has not increased sufficiently and critical shortages continue to exist in a variety of forms. Health care for the disadvantaged at times is pitiful. The lack of sufficient entry points for proper medical services is fairly apparent. These shortages are directly related to the inadequate supplies of skilled and semi-skilled health personnel.

The hospital is the largest single employer of health manpower. Hospitals in the United States employ two million persons, or about one-half of all the health service workers. The Boston Standard Metropolitan Statistical Area (SMSA) is composed of 77 cities and towns maintaining approximately 120 registered hospitals. These institutions employ well over 90 percent of the paramedical personnel in the area.

There are severe manpower shortages in the allied health sciences in the Boston SMSA, and it has been estimated that there are approximately 5,000 such openings in hospitals, nursing homes, infirmaries, clinics, and medical laboratories in this area.[1] The job vacancy rate is substantial among many of these paramedical occupations but the more critical shortages exist among the more skilled of the paramedical personnel.

The highest vacancy rates exist among Occupational and Recreational Therapists with 36.8 percent and 24.5 percent, respectively. However, Licensed Practical Nurses, Medical Technologists, and Aides and Orderlies represent the most significant shortages simply because of the large numbers employed in these occupations and the magnitudes of the vacancies (See Table A).

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1. Dean Ammer, Institutional Employment and Shortages of Paramedical Personnel. Northeastern University, Boston, Massachusetts. (A research report financed under grant from the United States Public Health Service), July 1, 1967.

TABLE A Selected Institutional Employment and Shortages In The Boston Standard Metropolitan Statistical Area 1967

OCCUPATION	Number of Employees	Number of Vacancies	Vacancy Rate
Occupational Therapist	152	56	36.8
Recreational Therapist	106	26	24.5
Licensed Practical Nurse	4,281	831	19.9
Physical Therapist	264	46	17.5
Medical Records Technician	224	29	12.9
Dietitians	263	33	12.5
Medical Records Librarian	93	11	11.8
Medical Technologist	651	77	11.8
Assistant Social Worker	89	10	11.2
Medical Technician	377	42	11.1
Inhalation Therapist	111	12	10.8
Social Workers	368	38	10.4
X-Ray Technician	510	42	8.2
Operating Room Technician	144	11	7.6
Aides and Orderlies	10,129	753	7.4
Speech Therapist	31	2	6.4
Dietary	5,321	312	5.8
X-Ray Assistants	207	8	3.8
Lab Assistant	586	13	2.2
Assistant Physical Therapist	79	0	0.0

Source: Dean Ammer, Institutional Employment and Shortages of Paramedical Personnel, p. 1.

METHODOLOGY

There are about 120 registered hospitals in the Boston Standard Metropolitan Statistical Area. We selected for this study 20 hospitals as a representative cross-section in the following six classifications adopted from the American Hospital Association:

(1) General Short-Term Non-Profit
(2) General Short-Term City
(3) General Short-Term Federal
(4) Special Short-Term Non-Profit
(5) Special Long-Term Non-Profit
(6) Special Long-Term State

Our initial list included a seventh classification, "proprietary, for profit," but we were not successful in getting the cooperation of any hospital in this group. We, therefore, omitted the category. This omission was of no significance since the group represented only a very small percentage of the hospitals in the area. All other hospitals contacted were very cooperative, and many personnel directors and administrators went out of their way to help us schedule interviews conveniently. See Appendix A for a complete listing of the hospitals cooperating in this study.

In selecting the paramedical occupations for our study, we tried to cover a broad range of technical occupations in hospitals requiring a wide variety of training. While we omitted Registered Nurses as a much studied occupation, we did include some of the relatively new and rapidly growing fields such as Inhalation and Nuclear Radiation Therapy. We also included

Social Worker and Social Worker Aide because of the current interest in utilizing residents of "poverty areas" in various social work programs (See Appendix B for a complete listing of occupations studied).

After numerous consultations with specialists in the various paramedical areas, we developed a questionnaire and a list of the major job functions of each occupation. Upon the advice of these specialists who were either supervisors, teachers or experienced employees in the various specialities, such as Radiology, Physical Therapy, Biochemistry, etc., the job functions were ranked in order of complexity from the easiest or most routine to the more unusual or difficult, in terms of the specific training or experience required. Using this technique, we hoped to ascertain for the different categories of personnel a reliable listing of job functions as well as the proportion of time spent on relatively routine and relatively complex tasks.

We also developed a questionnaire for each hospital administrator, inquiring into the hospital's employment, vacancies, and hiring standards. This set of questions was left with the hospital administrators to complete at their convenience. In several cases, this questionnaire was completed by persons in the personnel office of the hospitals, who perhaps were not fully aware of all the refinements of hospital employee hiring policies. Despite concerted efforts, a significant percentage of the questions asked in this administrative questionnaire were not completed by several hospitals.

From December 1967 to April 1968, we interviewed a sampling of paramedical personnel in 22 occupations in each of the 20 hospitals in our sample. The number and composition of the interviews depended upon the size and nature of the hospital. The number of interviews in each hospital ranged from about 15 to 45. In occupations involving Inhalation Therapy, Social Work, and Occupational Therapy, where hospitals generally employed only one or two employees, we obtained a 100 percent sample. In the laboratory and X-ray fields we also obtained very large samples, frequently up to 50 percent. In other areas where the total number of employees was larger, such as nursing, the relative size of the sample was smaller. Not all occupations were represented in all hospitals. The special long-term psychiatric hospitals, for example, did not employ certain laboratory personnel or EEG Technicians. Not all hospitals employed Physical Therapists and few hospitals had Occupational or Recreational Therapists on their staff. Table 1 in Appendix C shows a distribution of the 524 interviews completed, by occupation and by type of hospital.

Our interviews were divided into two principal parts. First, we asked a series of specific questions relating to each person's job functions. Related to this, we attempted to ascertain how much time, on a daily or weekly average basis, was spent on each particular function.

The second part of the questionnaire dealt with the individual's educational and professional background, an evaluation of his professional training and experience, and questions about his professional aspirations. In addition we attempted to obtain the employee's feelings and opinions about his occupation. The average interview lasted about ten minutes.

A large number of comparisons are constantly being made throughout the analysis sections of each of the following chapters. For example, analysis of the first six "easy" functions on Tables 30 and 31 (Microbiology) indicates that 81.3 percent of the Technologists perform these relatively simple functions, and they spend an average of 31.6 percent of their time on these duties. In comparison, 86.0 percent of the Technicians perform these same "easy" functions, spending an average of 40.3 percent of their time on these duties. The percentage of the more highly trained Technologists performing a function is always compared to the percentage of the lesser trained Technicians performing the same function. The time spent on a function by Technologists is always compared to the time spent on the same function by Technicians. In order to facilitate this comparison, one line under the percentage (i.e., 81.3) refers to the percentage of personnel performing the functions, while two lines under the percentage (i.e., 31.6) refers to the average amount of time spent on a function.

All numbered tables will be found in consecutive order in Appendix C.

CHAPTER I

Licensed Practical Nurse
Nurses Aide

ANALYSIS OF FUNCTIONS

There is a hierarchal relation between Licensed Practical Nurse and Nurses Aide, with the LPN at the higher level (See Figures 1 and 2 in Appendix C). For that matter, many of the LPNs had been Nurses Aides prior to becoming an LPN. A comparison of the two occupations shows a basic similarity in the functions performed, although there are differences between occupations in the average time spent on different functions.

Analysis of the first six "easy" functions on Tables 2 and 3 indicates that 82.2 percent of the LPNs perform these relatively simple functions, and they spend an average of 47.5 percent of their time on these duties. In comparison, 84.3 percent of the Aides perform these same functions, spending an average of 60.4 percent of their time on these duties.

Analysis of the six "more difficult" functions (14 through 19), indicates that 77.7 percent of the LPNs perform these functions, and they spend an average of 25.9 percent of their time on these duties. In comparison, 43.2 percent of the Aides perform these same "more difficult" duties while spending an average of 13.1 percent of their time on these functions.

A comparison of the functions of the LPNs and Aides reveals that there is a very significant and substantial difference in the numbers of Aides and LPNs performing a few critical functions. For example, only eight percent of all Aides order drugs, 29 percent do tube feeding, 29 percent take blood pressure, 25 percent dress wounds and 12 percent administer specific medication.

This is not surprising. It is precisely these functions which separate the trained from the untrained nurse. In fact, what is surprising and interesting is that we found so many Aides performing such relatively high level functions.

In general, it seems that Aides employed at General Short-Term Federal Hospitals spend a smaller proportion of their time on the more routine simple tasks than the more difficult functions, compared to the time-function analysis at the other five categories of hospitals (See Table 2).

LENGTH OF EMPLOYMENT

About 50 percent of both the LPNs and Aides have been employed less than three years at their occupation (See Table 4). However, the average number of years employed is higher for LPNs than for Aides (7.2 years as opposed to 6.6 years, see Table 5). Slightly less than one-third of each group has served over ten years in their occupation. The General Short-Term Non-Profit Hospitals appear to have a much shorter period of employment for both the LPNs and the Aides than the other five categories of hospitals. This implies a greater turnover in precisely those hospitals which serve the greater portion of daily needs of the community. The employment longevity problem of the General Short-Term Non-Profit Hospitals is even more apparent, as shown in Table 5. Here, the total average number of years employed as an LPN is considerably higher for all Special Long-Term Non-Profit (14.3 years) and State (13.8 years), than for the General Short-Term Non-Profit Hospitals (3.7 years). This fact is also true for the Aides, although to a lesser degree.

Examination of the previous employment record of LPNs and Aides shows that relatively few LPNs and Aides have been employed at nursing homes or on private duty prior to their hospital employment (Table 5). However, 28 percent of the LPNs compared to 19 percent of the Aides have been employed at other "health-related occupations." Included in this category would be any kind of work in the hospital. The fact that 28 percent of the LPNs have been employed in hospitals before becoming LPNs implies a certain amount of upward mobility. In most such cases LPNs had previously been Nurses Aides. In some cases they may have done Nurses Aide work prior to going to an LPN school; in other cases they may have had a part-time job as an Aide while in high school. The Aides who indicated that they had been previously employed at another health-related occupation frequently worked in maintenance or in a central supply room.

TRAINING

The Aides' training period is fairly erratic, ranging from two days to one year of on-the-job training, principally in the form of work experience. However, the most typical period of on-the-job training for the Aide is two weeks, and a high school diploma is generally not required for Aide training. The LPN, on the other hand, receives a much more formal period of training, consisting of 15 months of class work and practical experience. A high school diploma is required of LPN candidates.

We found that over one-quarter of the LPNs (29 percent) received their training more than five years after leaving high school (See Table 6). Most such cases were women who had raised their families and had gone back to work, and several of them had taken advantage of the MDTA training programs at Girls Trade School. About half of the Nurses Aides also went into this paramedical work later in life. Several of the younger NAs indicated they were planning to go on to LPN or even RN training programs. The City Hospitals as well as the Special Short-Term Non-Profit Hospitals drew the largest percentage of Nurses Aides from the older group of "returnees" to the labor force (80 percent and 75 percent, respectively).

We also investigated where the LPNs trained, and found that the largest single supplier to the hospitals in this sample was the Shepard Gill School (See Table 7). Its graduates constituted 26 percent of our sample. Another 13 percent were trained at Girls Trade School in Boston.

Aides were trained on-the-job at each hospital. About three-quarters of the Aides interviewed in our study had been trained at the hospital where they are presently employed (See Table 8). Since the Aides training is usually informal on-the-job training, many Aides who shift jobs from one hospital to another indicated that they received training in both hospitals.

EDUCATION

We found relatively few persons in the sample who had not had some high school education (See Table 9). Only two percent of Aides and LPNs did not complete eight years of elementary school. In several cases these were immigrants. As can be expected, we found that a higher percentage of LPNs completed high school (94 percent), than did Aides (only 67 percent).

OCCUPATIONAL GOALS

In order to elicit the individual's feeling about his professional goals and possibilities, we asked each person how high he thought he could rise, given approximately his present educational level (See Tables 10 and 11). About 59 percent of the LPNs and 67 percent of the Aides felt that they would remain at their present level. Thirty-eight percent of the

LPNs felt that they could go on to a higher level by promotion, for example, to "staff nurse", or by going to another hospital. About 18 percent of all the LPNs felt they could improve their position by taking an additional course. In the General Short-Term Non-Profit Hospitals and the Special Long-Term State Hospitals, approximately one third of the Aides felt they could improve their condition by getting a "little more training".

PREPARATION FOR JOB PERFORMANCE

We asked all employees for an evaluation of their own background as a preparation for the tasks they are now performing. To what extent did high school, college, specific occupational training (in this case, the LPN course or the Aide training) and work experience help them in the performance of their present job. The LPNs attributed about 60 percent of their preparation as LPNs to occupational training, whereas the Aides attributed only 27 percent to their on-the-job training and 52 percent to their work experience (See Table 12). In other words, Aides really learned on the job. High school was not considered important as a preparation for the tasks performed although many respondents said that without a high school education they could not have achieved the position they now held. The feeling seemed to prevail that despite the fact a high school education was sometimes required as prerequisite for Nurses Aide training, and despite the fact that most Aides did have a high school diploma (67 percent), this factor did not loom large as a necessary background for Aide training.

ADMINISTRATION RESPONSES TO QUESTIONNAIRE

The replies to a questionnaire submitted to the 20 hospital administrators are summarized on Tables 125 through 128. The findings indicate that 57.9

percent of the hospitals who replied to the question considered the hiring standards for the LPNs just right, while 21.1 percent thought these standards too low. An additional 21.1 percent did not answer. More than 68.0 percent of the hospitals believed the standards for NA to be just right, while 10.5 percent thought they were too low and 20.1 percent did not answer.

Over 60 percent of the hospitals replying to the questions indicated that they control hiring standards for the LPNs, while 37.4 percent indicated the accrediting agency controls entrance requirements (Table 127). In reference to the NA, over 80 percent of the respondent hospitals indicated they control entrance requirements, while over 5 percent indicated the accrediting agency sets the requirements. Thirteen percent did not answer (Table 127).

The respondent hospitals indicated that hiring standards have been in effect for a relatively long period of time. Over 47 percent of the respondent hospitals indicated that these standards for LPNs have been in effect for over 10 years; more than 36 percent indicated that the standards for Aides have been in effect for more than 10 years, and 21 percent indicated their standards have been in force for five years or less (See Table 128).

Vacancy ratios are relatively high for both the LPNs and the Aides. Of the hospitals replying to this question, the vacancy ratio for the LPNs was 14.3 percent, for the Aides, 10.7 percent (See Table 126).

Despite these replies supplied by the respondent hospitals, none of the twenty hospitals considered the job requirements too high for either the LPNs or the Aides (Table 125).

SUMMARY AND CONCLUSIONS

The functions selected and included in this study proved to be fairly complete and a true test for the tasks performed by LPNs and Aides. After minor adjustments in functions, based upon suggestions of interviewees, all persons interviewed agreed that the list of functions occupied more than 95 percent of their workweek. The listing, therefore, is an accurate and tested job description for both the LPN and the Aide.

The ranking of all functions in order of difficulty, as suggested by the consulting LPNs and Aides, has proven relatively correct (See Tables 2 and 3). Several of the functions toward the bottom of the list (supposedly more difficult and requiring more experience and training), are performed by most LPNs and a smaller, although significant, percentage of the Aides. However, these functions occupy a relatively small percentage of LPN and Aide time. A much greater percentage of LPN time is spent performing the easier rather than the more difficult tasks. If a guide to the degree of difficulty is whether the functions are generally performed by Aides, then a comparison of eight functions which are performed by more than 80 percent of the Aides, shows the LPN allocating 63.5 percent and the Aides 79.9 percent of their time to these items. Of the Aides performing these functions, 33 percent have not completed their high school training, and none has received any prolonged period of on-the-job training or professional training.

The significant differences between the LPNs with their higher level of training and Aides seem to rest on the following functions: Tube feeding (7)[1], dressing wounds (13), assembling and using such equipment

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2. The following numbers in parentheses refer to the function numbers on Tables 2 and 3.

as catheters, trachotomy tubes, and oxygen supplies (14), setting up and using BIRD respirators (19), and the most important and significant items, administering specific medications and noting the time and amount on the patients charts (16). The majority of the LPNs perform all the above functions whereas the majority of Aides do not. However, despite this fact, LPNs spend only 15.9 percent of their time on these seven functions, while the Aides spend 4.5 percent.

The LPNs spend well over 60 percent of their time on routine tasks, which can be learned relatively easily and quickly. Considering the fact that LPNs are exposed to 15 months of formal professional training beyond high school, while the Aides usually receive only a few weeks of informal on the job training, the expenditure of time by the LPN on simple functions seems difficult to justify. The Aide with far less formal schooling and considerably less formal professional training appears to be quite adequate in performing these less skilled, although extremely necessary simple patient-care items. In several of the 20 hospitals included in this study, the NAs performed all the functions of the LPN, despite the differences in professional and educational backgrounds.

Only a small percentage of the LPNs and Aides have longevity in the hospitals included in this sample. This is especially true of the General Short-Term Non-Profit Hospitals.

Aside from low wages the lack of sufficient professional advancement seems to be significant in causing shortages and turnover. Here we are speaking about dead-end occupations, or jobs that appear to be dead-end to the job holder. To the job holder upward mobility from these positions seem very remote.

CHAPTER II

Occupational Therapist
Manual Arts Therapist
Physical Therapist
Physical Therapy Aide
Corrective Therapist
Recreational Therapist

ANALYSIS OF FUNCTIONS

A total of 14 Occupational and Manual Arts Therapists were included in this study. Most of these individuals performed most of the functions in their occupation. For example, 71.0 percent of these Therapists utilized creative and manual arts, and are involved in recreational, educational, and social activities, spending an average of 18.1 percent of their time on these functions (Function Number 6 on Tables 13 and 14). Eighty-five percent of the Occupational and Manual Arts Therapists plan and participate in medical activities in hospitals to rehabilitate patients who are physically or mentally ill, while spending an average of 11.6 percent of their time on these functions (Functions Number 5 on Tables 13 and 14.

A grouping of the first six so called "easy" functions on Table 13 indicate that 82.0 percent of these Therapists perform these relatively easy functions and they spend an average of 56.0 percent of their time on these duties. An analysis of the six "more difficult" duties (Functions Number 7 through 12 on Tables 13 and 14) indicate that 50.0 percent of these Therapists perform these duties, and they spend an average of 24.4 percent of their time on these functions.

Although one of the more difficult functions, Number 14 (teaching woodworking, photography, metal working, agriculture, electricity, etc.) consumes relatively large percentages of time (8.3 percent), only 14 percent of these Therapists perform this function. Only the General Short-Term Federal Hospitals get involved with this more complicated function (Number 14). At these hospitals almost 25 percent of the time is spent on this function. Figure 3 gives a visual pie breakdown of functions performed by Occupational and Manual Arts Therapists.

A total of 20 Physical and Corrective Therapists plus five Physical Therapy Aides are included in this sample. An analysis of the first six relatively "easy" functions indicates that 79.1 percent of these Therapists perform these relatively simple duties, and they spend an average of 22.6 percent of their time on these functions. In comparison, 73.3 percent of the Aides perform these same functions, spending an average of 55.6 percent of their time on these less sophisticated items. A group of six "more difficult" duties(Functions 11 through 16 on Tables 15 and 16) indicates that 76.7 percent of the Therapists perform these items, while spending an average of 34.3 percent of their time on these more sophisticated functions. In comparison, 46.7 percent of the Aides perform these functions, spending an average of 20.8 percent of their time on these more difficult functions. Clearly the Physical Therapy Aides are devoting a larger percentage of their time to the less sophisticated functions while the Therapists spend more of their time on the functions utilizing their greater experience and training. A visual pie breakdown of the job functions of the Physical Therapists, Corrective Therapists, and Aides is shown on Figures 4 and 5.

A total of 6 Recreational Therapists was included in this study. Since the numbers are so small, no attempt was made to distribute them among the various types of hospitals and only totals for all hospitals are shown in Table 17.

LENGTH OF EMPLOYMENT

Approximately 50 percent of the Occupational and Manual Arts Therapists have been employed at their occupation for more than ten years. (Table 18). The General Short-Term Federal Hospitals employed personnel in this field with the longest longevity (80 percent, fifteen years and over).

Forty-five percent of the Physical and Corrective Therapists have been employed at their occupation for more than ten years. The Aides in this field have much less longevity (20 percent had less than one year and 40 percent, one to three years, see Table 19). Indications are that the Physical Therapy Aide is a relatively new occupation with less than complete acceptance.

Recreational Therapists also have less longevity at their occupations than Occupational and Manual Arts Therapists. Fifty percent of the recreational Therapists have been employed at their occupation for one to three years (Table 20).

EDUCATION

Almost 80 percent of the Occupational and Manual Arts Therapists have received their Bachelor's or Master's Degree (Table 21). The inference is strong that entry requirements into this field are quite high.

Ninety percent of the Physical and Corrective Therapists have their Bachelor's Degree. In comparison, Aides in this field are much less formally educated. Twenty percent of the Aides have eight years of schooling or less, and 60 percent have only a high school education, (Table 22).

All the Recreational Therapists included in this sample have their Bachelor's Degree (Table 23).

OCCUPATIONAL GOALS

Each person was asked how far he felt he could advance professionally, given approximately his present educational level. Over 75 percent of the Occupational and Manual Arts Therapists felt they could go on to higher levels. Twenty-eight percent felt they would remain at their present occupational category.

Seventy-three percent of the Physical and Corrective Therapists believed they could achieve some higher status, while 26 percent felt they would remain at their present level. Eight percent of the Aides in this category felt they would remain at their present level. Only 20 percent felt they might rise. The indication is that most Aides felt they were already at a dead end.

Eighty-three percent of the Recreational Therapists believed they would remain at their present level. Only 17 percent of them felt they might advance.

PREPARATION FOR JOB PERFORMANCE

We asked all employees for an evaluation of their own background as a preparation for the tasks they are now performing. As might be expected, all the Therapists included in this section indicated that high school played a very small part in preparing them for the functions they now perform. College and professional training in college were alloted the highest percentage (See Tables 27, 28 and 29).

Aides who received their training on the job primarily felt that on-the-job training and work experience (68 percent) were most important in preparing them for the functions they presently perform.

ADMINISTRATION RESPONSES TO QUESTIONNAIRE

The overwhelming majority of the hospitals replying to the question considered the hiring standards for the Therapists to be just right (Occupational and Manual Arts, 42.1 percent just right, and 52.6 percent, no answer; Physical and Corrective Therapists 68.4 percent just right, and 84.2 percent no answer; see Table 125). The large percentage of no answers in many cases (i.e., Recreational Therapists) simply means that this particular specialty was not employed in the hospital.

Only one hospital of those responding to the question believed the standards for the Therapists were too high (Physical Therapists--too high, 5.3 percent--Table 125).

The vacancy ratios were highest for the Physical and Corrective Therapists, (11.8 percent Table 126).

All the hospitals that answered the question controlled most of the hiring standards for the Therapists group. However, one-third of the hospitals indicated the accrediting agency did control some standards (Table 127).

SUMMARY AND CONCLUSIONS

The functions selected and included in this study proved to be complete and a true test of the work performed by this group of Therapists.

The distribution of time devoted to the various functions by highly trained Therapists and lesser-trained Aides indicates the rankings of job functions from easiest to more difficult is, for the most part, correct. We consider the various lists of functions to be an accurate and tested job description for the Occupational, Manual Arts, Physical and Corrective and Recreational Therapists plus the Physical Therapy Aide.

It would somewhat impossible to test objectively the degree of difficulty of the various functions since, in most cases, there was no counterpart Aide for most of the Therapists. However, in general, a minority of the Therapists performed the lower items on the function list (the "more difficult" functions) and the vast majority of the Therapists did consider these duties a greater tax on their educational and professional abilities.

The Physical Therapists did have an Aide category with which some comparisons can be made. These Physical Therapy Aides did spend over 55 percent of their time on the same duties as Physical Therapists. The Aides did spend a smaller percentage of their time in comparison to the Therapists on the "more difficult" functions, but some Aides, however, spent some time on all of the functions of the Therapists.

No cogent argument was offered for not utilizing the far less educated and professionally trained Aide to assist the Physical Therapist and, further, in some cases, supplant some of the responsibilities of the Therapists. The duties of the other Therapists appear to be no more difficult than those of the Physical Therapists, yet we found the utilization of Aides in this whole area extremely sparse. The Aides that are being utilized have created a relatively new occupation with less than complete acceptance.

CHAPTER III

Laboratory Personnel

Microbiology
Histology
Hemotology
Biochemistry
Cytology
Blood Bank
Laboratory Assistant

ANALYSIS OF FUNCTIONS

Eight Microbiology Technologists and 19 Technicians are included in this sample. Analysis of the first six relatively "easy" functions on Tables 30 and 31 indicate that 81.3 percent of the Technologists perform these functions, and they spend an average of 31.6 percent of their time on these relatively simple duties. In comparison, 86.0 percent of the Technicians perform these same "easy" functions, spending an average of 40.3 percent of their time on these duties.

The clearest variance in this time-function relationship is in Function Number 1, "initial planting of cultures," where Technologists spend only 2.6 percent of their time but Technicians spend 15.9 percent of their time.

A grouping of the last six "more difficult" functions (Items 13 through 18), indicates that 54.0 percent of the Technologists perform these functions, and they spend an average of 12.3 percent of their time on these duties. In comparison, 65.0 percent of the Technicians perform these difficult duties, spending an average of 13.1 percent of their time on them. There appears to be only slight differences in this time-function analysis between Microbiology Technologists and Technicians, despite the higher rating and status of the Technologist. Figures 7 and 8 give a visual pie breakdown of the functions of Microbiology Technologists and Technicians.

Ten Hemotology Technologists and 23 Technicians are included in this sample. A grouping of the first six relatively "easy" functions on Tables 32 and 33 indicates that 97 percent of the Technologists perform these functions, and they spend an average of 60 percent of their time on these functions. In comparison, 87 percent of the Technicians perform these simple functions, spending an average of 67 percent of their time on these simple functions.

Analysis of the last six "more difficult" functions (Items 7 through 12 Table 32), indicates that 54 percent of the Technologists perform these functions, and they spend an average of 22.4 percent of their time on these functions. In comparison, 35 percent of the Technicians perform these tasks spending an average of 17.4 percent of their time on these "more difficult" functions.

The difference in this time-function analysis between Technologists and Technicians is very minor, and appears basically in Function Number 4 only (performing routine tests, Hct, Hgb, WBC, etc.). An examination of the individual categories of hospitals where both Hemotology Technologists and Technicians are employed fails to show any substantial differences in the allotment of time spent on the various functions. A visual pie breakdown of the functions of Hemotology Technologists and Technicians is shown on Figures 9 and 10.

Three Cytotechnologists and 7 Cytotechnicians are included in this section. Analysis of the first six "easy" functions on Tables 35 and 36 indicates that 27.7 percent of the Technologists perform these tasks, spending an average of 5.2 percent of their time on these relatively simple duties. In comparison, 47.6 percent of the Technicians perform these functions, and they spend an average of 36.2 percent of their time on these relatively simple duties.

A grouping of the last six "more difficult" functions indicates that 55.5 percent of the Cytotechnologists perform these duties, spending an average of 94.8 percent of their time on these "more difficult" functions. In comparison, 45.2 percent of the Technicians perform these same "difficult" duties, spending an average of 63.9 percent of their time on these items.

The number of workers in this category is rather small. The evidence indicates that most of the functions are performed by both the Technologists and the Technicians, with the only exception being functions 5, 6, and 9 (Tables 34 and 35). A pie breakdown of the functions of Cytotechnologists and Cytotechnicians is shown on Figures 11 and 12.

Five Histotechnologists and 12 Histotechnicians were included in this sample. Analysis of the first six "easy" functions on Tables 36 and 37 indicate that 83.3 percent of the Technologists fulfill these duties, spending an average of 69.2 percent of their time on these functions. In comparison, 88.8 percent of the Technicians perform these duties spending an average of 79.3 percent of their time on these functions.

A grouping of the last six "more difficult" functions indicates that 53.3 percent of the Technologists fulfill these duties, spending an average of 15.0 percent of their time on these functions. In comparison, 65.2 percent of the Technicians perform these functions, spending an average of 11.7 percent of their time on these "more difficult" duties.

Again, there seems to be no great difference in time spent on the various functions and percentage of Technologists and Technicians performing these functions. Figures 13 and 14 shows a pie distribution of functions of the Histotechnologist and Histotechnicians.

Eleven Biochemistry Technologists and 22 Biochemistry Technicians were analyzed in this study. Analysis of the first six "easy" functions on Tables 38 and 39 indicates that 80.3 percent of the Technologists perform these duties, spending an average of 43.5 percent of their time on these relatively simple functions. In comparison, 90.1 percent of the Technicians fulfill these functions, spending an average of 52.8 percent of their time on them.

A grouping of the last six "more difficult" functions (7 through 12), indicates that 72.7 percent of the Technologists fulfill these duties, spending an average of 26.7 percent of their time on these more taxing functions. In comparison, 71.2 percent of the Technicians perform these same functions, spending an average of 27.2 percent of their time on these "more difficult" duties.

Again, the differences between Technologists and Technicians in what they do and how they spend their time are very small. Figures 15 and 16 show a pie breakdown of the functions of Biochemistry Technologists and Technicians.

Eleven Blood Bank Technologists and 12 Technicians are covered in this sample. Analysis of the first six "easy" functions on Tables 40 and 41 indicates that 81.8 percent of the Technologists perform these functions, spending an average of 37.9 percent of their time on them. In comparison, 84.7 percent of the Technicians perform the very same functions, spending an average of 37.1 percent of their time on these relatively simple duties.

Analysis of six "more difficult" duties indicates that 80.3 percent of the Blood Bank Technologists fulfill these functions, spending an average of 33.0 percent of their time on these duties. A smaller proportion (66.7 percent) of the Technicians perform these "more difficult" functions, but they spend more of their time (46.3 percent) on them.

Four Laboratory Assistants were included in this study. Tables 42 and 43 indicate that three of the Laboratory Assistants spend an average of 19.0 percent of their time on function Number 3 (examining urine sediment). This seems to represent the largest single expenditure of time by this occupational category. An average of 44 percent of their time is spent on the first six "easier" functions, while 41.2 percent of their time is spent on the six "more difficult" items. It would be difficult to draw any conclusions because of the small number of persons included in this category. Table 19 gives a pie breakdown of the functions of the Laboratory Assistants.

LENGTH OF EMPLOYMENT

Tables 44 through 50 show a percentage distribution of the various laboratory personnel in different types of hospitals, by number of years employed at present occupation. Of the total 48 Technologists, 39.8 percent have been employed at their present occupation from one to three years; 32.8 percent of the 98 Technicians have also been employed at their present occupation from one to three years.

Approximately one-half of all the 146 Technologists and Technicians have been employed three years or less. The number of personnel in the 15 years or over category is small; only 18.7 percent of the 48 Technologists and 15.2 percent of the 98 Technicians have been employed at their present occupation for 15 years or more.

EDUCATION

Tables 50 through 56 shows the percentage distribution of the various laboratory personnel in various types of hospitals by last year of school completed and degree obtained.

Only one person (a Laboratory Assistant) out of the 146 Technologists and Technicians failed to complete more than eight years of schooling.

Of the 48 Technologists, 77.2 percent have their Bachelor's Degree, 5.5 percent have their Master's Degree, and 3.9 percent have their Associate of Arts Degree. Of the 98 Technicians, only 2.0 percent have their Bachelor's Degree, none have their Master's Degree and 5.2 percent have their Associate of Arts Degree.

Microbiology, Hemotology, Histology, and Biochemistry Technologists, on the average, have well over 80 percent of their personnel with Bachelor's or Master's Degrees. Only Cytotechnologists and Blood Bank Technologists have less than 80 percent (66.7 percent and 36.4 percent, respectively). Most of the Technicians have only their high school diploma plus 12 to 15 months of professional training (87.7 percent, see Tables 50 through 56).

OCCUPATIONAL GOALS

Each interviewee was asked how far he could advance professionally given his present educational level (Tables 50 and 57 through 62). Over 22 percent of the Technologists and 48 percent of the Technicians expected to remain at their present level. About three out of five of the Technologists and one of four of the Technicians believed that they could become a supervisor of a department. Twelve percent of the Technologists and only two percent of the Technicians thought they could go into teaching.

Almost one-half of the 98 Technicians felt that without further schooling and training they were at an occupational dead end.

PREPARATION FOR JOB PERFORMED

We asked all the laboratory personnel for an evaluation of their own backgrounds as preparation for the tasks that they are now performing (Tables 50 and 63 through 68).

The 48 Technologists believed their high school training to be of minor importance, accounting for only 5.1 percent of their meaningful background required for adequate job performance. The 98 Technicians believed that high school accounted for 7.6 percent of their required training.

As one might expect, since the 48 Technologists accrued many more years in college than the Technicians, the former alloted this educational exposure a good deal more credit than did Technicians for job preparation (30.2 percent for Technologists and 10.5 percent for Technicians).

Professional training ranked relatively high in the minds of both Technologists and Technicians as preparation for job duties (32.4 percent for the former; 28.4 percent for the latter. The on-the-job training also ranked fairly high in the minds of both Technologists and Technicians as preparation for job functions, with about 25 percent for each group. Technologists alloted slightly less value to work experience in preparation for job performance than did Technicians.

RESPONSES TO ADMINISTRATIVE QUESTIONNAIRE

The vast majority of hospitals responding, considered the hiring standards for laboratory personnel to be just right. For example, 73.7 percent of the hospitals thought the standards for microbiology were just right (See Table 125). Most of the hospitals indicated that the department, administration, or both, set the majority of hiring standards for this group of laboratory personnel (Table 127). The vacancy ratio reported by the hospitals was relatively high in some cases, ranging from 16.9 percent of the Microbiology group to 4.0 percent of the Histology group (Table 126).

These standards for the group of laboratory personnel have been in effect for a considerable length of time (most over 10 years, see Table 128). However, none of the hospitals replying to the question considered these hiring standards too high, and about 10 percent considered them too low.

SUMMARY AND CONCLUSIONS

For each of the six Technologist occupations in this group of laboratory personnel, there was a counterpart Technician in the same field. Both the Technologists and the Technicians were asked the same functional questions. Using this technique, we were able to determine the degree of overlapping of job functions for the Technologists and Technicians.

In five of the six comparisons made between Technologists and Technicians only minor differences were found in the distribution of their work time over a given set of functions. For example, in comparing Hemotology Technologists and Technicians, analysis of the first six "easy" functions indicates that 97 percent of the Technologists spend 60 percent of their time on the same functions as 87 percent of the Technicians who spend an average of 67 percent of their time performing these items. A review of the last six "more difficult" functions indicates that 54 percent of the Technologists spend an average of 22.4 percent of their time on the same functions as 35 percent of the Technicians who spend an average of 17.4 percent of their time. In most of the other comparisons made in this section, the percentage of Technologists and Technicians performing the same functions were even closer than the example just cited. Only in the case of the three Cytotechnologists and seven Cytotechnicians were more substantial differences found in this time-function analysis.

Of the 48 Technologists included in this sample, 77.2 percent have their Bachelor's Degree, 5.5 percent have their Master's Degree, and 3.9 percent have their Associate of Arts Degree. Over 86 percent of the Technologists have a Bachelor's, Master's, or Associate of Arts Degree.

Of the 98 Technicians, only 2.0 percent have their Bachelor's Degree, none has a Master's Degree and 5.2 percent have Associate of Arts Degrees. Only 7.2 percent of the Technicians have a Bachelor's, Master's, or Associate of Arts Degree.

The vast majority of Technicians perform the very same tasks as the Technologists in their field. However, far more time and effort are devoted to the education and professional training of the Technologists. The Technician, with a good deal less education and professional training, is performing adequately on the job.

Table B shows the various kinds of licenses held by the laboratory personnel (exluding the Laboratory Assistants). Only 26 out of the 142 or 18.3 percent of all the laboratory personnel interviewed are M.T.A.S.C.P. (Medical Technologists, American Society of Clinical Pathologists). An additional 28, or 19.7 percent, are members of other professional organizations.

Table No. B Laboratory Personnel Holding Various Kinds of Licenses,
By Occupation

OCCUPATIONS	Total Number of Employees Interviewed	Medical Techno-logists (A.S.C.P.)		American Society of Micro-biologists		American Medical Techni-cians		Certified Laboratory Assistants		H.T. or C.T. (A.S.C.P.)	
		No.	%	No.	%	No.	%	No.	%	No.	%
Microbiology	27	5	18.5	3	11.1	2	7.4	3	11.1		
Hemotology	32	7	21.9			3	9.3	4	12.5		
Cytology	10									5	50.0
Histology	17									3	17.6
Biochemistry	33	8	24.2			2	6.0	3	9.0		
Blood Bank	23	6	26.1								
TOTAL	142	26	18.3	3	2.1	7	4.9	10	7.0	8	5.6

CHAPTER IV

Radiation Therapist
Radiologic Technician
X-Ray Developing Machine Operator
Electrocardiograph Technician
Electroencephalograph Technician
Inhalation Therapist

ANALYSIS OF FUNCTIONS

A total of 12 Radiation Therapists are included in this sample. Analysis of the first six relatively "easy" functions (1 through 4c) indicates that 50.0 percent of the Radiation Therapists perform these functions, and they spend an average of 29.1 percent of their time on these duties (Tables 69 and 70). A review of six of the "more difficult" functions (6 through 8), indicates that 29.0 percent of these Therapists fulfill these duties, spending an average of 34.8 percent of their time on these more taxing responsibilities.

Tables 69 and 70 indicate that a relatively large percentage of Radiation Therapists (58.3 percent), spend a substantial amount of time (13.3 percent), on function number 4d (scintillation and position), and 50 percent spend 14.8 percent of their time on function 6b (subjecting patients to radiation and x-ray therapy). More than 50 percent of the Therapists devote almost 30 percent of their time to those functions which are approximately in the middle range of difficulty. Figure 20 shows a pie breakdown of the functions of the Radiation Therapists.

A total of 33 Radiologic Technicians were included in this sample. A review of the first six "easy" functions listed on Tables 71 and 72 indicates that 70.1 percent of these X-Ray Technicians perform these duties spending an average of 36.3 percent of their time on these functions. An analysis of the second six "more difficult" functions (7 through 12) indicates that 69.7 percent of the Radiologic Technicians fulfill these duties, spending an average of 40.8 percent of their time on these more difficult responsibilities.

The great majority of X-Ray Technicians (95.0 percent) spend a substantial amount of time on functions 10 (specializing in taking X-rays of specific areas of the body, 14.6 percent) and 11 (adjusting control, regulating length and intensity of exposure, 15.1 percent). Figure 21 shows a pie breakdown of the functions of the Radiologic Technicians.

A total of 9 X-ray Developing Machine Operators[3] have been included in this sample (Tables 73 and 74 plus Figure 22). A review of the first four relatively "easy" functions indicates that 66.6 percent of the X-ray Developers perform these functions, and they spend an average of 53.0 percent of their time on these duties. Analysis of the second four "more difficult" functions indicates that 75.0 percent of the X-ray Developers perform these duties, spending an average of 30.5 percent of their time on these more taxing items.

The duties in function number 3 (mixing developing solutions according to specifications) are rarely performed. These solutions are usually bought and installed ready-made by an outside firm. Function number 4 (positioning exposed film in automatic machine to develop) is done by 100 percent of the X-ray Developers and occupies the most significant amount of time (32.7 per cent).

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[3] Includes one totally blind person employed at the Deaconess Hospital.

The single totally blind person included in this group performed the majority of the important functions of an X-ray Developer. His allotment of time, however, was somewhat different than the average. Over 80 percent of his time was spent on function number 4.

A review of the first four relatively "easy" functions performed by 16 Electrocardiograph Technicians indicates that 95.4 percent of these Technicians perform these duties, and spend an average of 48.8 percent of their time on them. An analysis of functions 5 through 9, the "more difficult" items, indicates that 72.5 percent of the EEG Technicians perform these functions, spending on average 24.2 percent of their time on these tasks (See Tables 75, 76 and Figure 23).

Functions 3 (attaching electrodes), 4 (mounting of tracing for inclusions in chart), and 5 (operating the electrocardiograph machine) are the most important and time-consuming duties. More than 90.0 percent of the Technicians spend almost half of their time on these three functions.

A total of 11 Electroencephalograph Technicians are included in this sample (Tables 77, 78, and Figure 24). A review of the first four relatively "easy" functions indicates that an average of 95.4 percent of these Technicians perform these duties and they spend an average of 52.0 percent of their time on these items. An analysis of the next five "more difficult" functions (5 through 9) indicates that 90.9 percent of the EEG Technicians perform these duties, spending more than 25.0 percent of their time on these responsibilities.

Functions 2 (measuring impulses on machines),3 (attaching electrode terminals and setting up machine),and 4 (fastening electrodes to patient) are the most important and time consuming duties. More than 96.0 percent of the Technicians spend an average of 46 percent of their time on these three items.

A review of the first six relatively "easy" functions performed by 17 Inhalation Therapists indicates that 59.8 percent of these Technicians perform these functions, and they spend an average of 19.7 percent of their time on these duties. Analysis of the last six "more difficult" functions (9 through 14) indicates that 69.6 percent of these Technicians perform these duties, spending an average of 30.5 percent of their time on these more taxing responsibilities (See Tables 79, 80, and Figure 25).

The majority of the Inhalation Therapists spend more of their time on the difficult functions. Function number 18 ranks very high in expenditure of time. This "other" category would include such duties as cleaning and sterilizing equipment, disassembling equipment, and maintaining applications for patients.

LENGTH OF EMPLOYMENT

Table 81 shows a percentage distribution of 12 Radiation Therapists in various types of hospitals by number of years employed in present occupation. Twenty-five percent have been employed less than one year, 25 percent, one to three years, 16.7 percent, four to six years and 33.3 percent, 15 years and over. Of the four Radiation Therapists employed in the General Short-Term Non-Profit Hospitals, three have been employed 15 years or more.

Of the total of 33 Radiologic Technicians, 54.5 percent have been employed three years or less, and only 21.1 percent have been employed 15 years or more (Table 82). In the General Short-Term Non-Profit Hospitals where 14 of the 33 X-ray Technicians are employed, 70 percent have been employed three years or less and only 14.3 percent have been employed 15 years or more. Twenty-two percent of the X-ray Developers have been employed three years or less, while 25 percent have been employed 15 years or more (Table 83).

Of the 16 EKG Technicians, 44 percent have been employed three years or less, while 25 percent have been employed 15 years or more. Seventy percent of the 10 EEG Technicians have been employed three years or less and none have been employed more than nine years (Table 84).

Seventeen Inhalation Therapists are included in this group. Forty-seven percent have been employed three years or less, while only 5.9 percent have been employed 15 years or more (Table 85). In the General Short-Term Non-Profit Hospitals where 10 of the 17 Inhalation Therapists are employed, 60 percent of them have been employed three years or less while none has been employed over nine years.

EDUCATION

Table 86 shows the percentage distribution of the 12 Radiation Therapists in various types of hospitals by last year of school completed and degree obtained. One hundred percent of these Therapists have a high school diploma. Slightly over 8 percent have one or two years of college.

One hundred percent of the 33 Radiologic Technicians have a high school diploma. Only 12.1 percent have one or two years of college (Table 87). Of the 9 X-ray Developers, five have a high school diploma, one has a Bachelor's Degree, one has eight years of schooling or less, and two have only three years of high school (Table 88).

Of the 16 EKG Technicians, 68.8 percent have a high school diploma, forty-three percent have one or two years of college while 25 percent have a Bachelor's Degree. Twenty-five percent have no high school diploma (Table 89).

Nine of the 10 EEG Technicians have a high school diploma and four have several years of college; one has a Bachelor's Degree, one did not complete high school (See Table 89).

The vast majority of the 17 Inhalation Therapists have received their high school diploma (82.3 percent). More than five percent have their Bachelor's Degree and 5.9 percent have their Master's. As many as 17.6 percent have had only one to three years of high school.

OCCUPATIONAL GOALS

Each person was asked how much professional advancement he felt he could attain, given approximately his present educational level. Of the 12 Radiation Therapists, 41.7 percent believed they would remain at their present level (100 percent in the General Short-Term Non-Profit Hosptials). Over 40 percent believed they might become supervisors of a department (Table 91). Twenty-seven percent of the X-ray Technicians believed that they would remain at their present level, but as many as 57.6 percent believed they could become supervisors of a department (Table 92). Eight of the nine X-ray Developers thought they would remain at their present position (Table 93).

More than 37 percent of the 16 EKG Technicians believe they could become supervisors of a department, while almost the same percentage (37.5) thought they might remain at their present duties (Table 94). Five of the 10 EEG Technicians believed they were at a dead end and could not rise, while two thought they might become a supervisor of a department (Table 94).

Of the 17 Inhalation Therapists, 52.9 percent believed they were at a dead-end and could not advance, while 14.3 percent believed they might be able to become supervisor of a department (Table 95).

PREPARATION FOR JOB PERFORMANCE

All the paramedical personnel in this category were asked for an evaluation of their own backgrounds as a preparation for the tasks they are now performing.

The group of 12 Radiation Therapists believed their high school training accounted for 16.3 percent of the meaningful background that prepared them for their current job. Professional training and on-the-job training were the two highest ranked categories (28.4 percent and 32.6 percent, respectively). Work experience was credited with 14.3 percent of their preparation (Table 96).

Professional training and on-the-job training ranked relatively high for the 33 X-ray Technicians as preparation for their job duties. They indicated that 30.3 percent of their preparation was derived from professional training and 29.7 percent was derived from on-the-job training. Work experience was alloted 23.5 percent. Relatively slight credit was given to high school and college (5.5 percent and 11.0 percent respectively, Table 97).

The nine X-ray Developers alloted over 80 percent to on-the-job training and work experience in preparation for work duties (46.5 percent to on-the-job training and 34.4 percent to work experience, Table 98). Professional training was only granted 1.5 percent.

The 16 EKG Technicians granted an overwhelming 58.7 percent credit to on-the-job training. Work experience was credited with 15.6 percent, while high school only rated 4.0 percent (Table 99).

The 10 EEG Technicians allotted slightly more value to on-the-job training than professional training, but both ranked relatively high in preparation for job functions (35.0 percent and 33.5 percent respectively, Table 99). Work experience was credited with 15.0 percent and high school was rated at 13.5 percent.

High school and college were rated relatively modestly by the 17 Inhalation Therapists (10.0 percent and 2.4 percent respectively, Table 100). The remaining three categories were all equally rated high for preparation of job functions (professional training 27.6 percent, on-the-job training 35.6 percent and work experience 24.4 percent).

ADMINISTRATION RESPONSES TO QUESTIONNAIRE

The vast majority of the hospitals replying to the questionnaire considered the hiring standards for the paramedical personnel in this group to be just right. For example, 68 percent of the responding hospitals considered the hiring standards for the Radiologic Technicians to be just right, five percent thought these requirements too low, and 26 percent did not answer (Table 125).

The 20 hospitals indicated that the most important vacancy ratio of this group of employees was for the Radiologic Technicians (11.9 percent Table 126). The vacancy ratio for the Radiation Therapists was 2.7 percent for X-ray Developers 3.2 percent, for EKG 5.2 percent, for EEG 17.6 percent, and for Inhalation Therapists 4.4 percent.

The hiring standards in the main are controlled by the relevant hospital department, the administration, or both. Over 65 percent of the respondent hospitals indicated that they control hiring standards for the Radiologic Technicians, about 20 percent indicated that the accrediting agency controlled standards and 13 percent did not answer (Table 127). Almost 60 percent of the respondent hospitals claimed they controlled standards for the Inhalation

Therapists, approximately 20 percent said the accrediting agency controlled these standards and 20 percent did not answer.

Only a small percentage of the respondent hospitals indicated that these high standards were in effect for less than five years, and a slightly larger percentage indicated that the standards were in force for 10 years or over. On a follow-up, many personnel administrators indicated that their "no answer" really means the hiring standards were in force for so long that they could not recall when they were actually set.

Not one hospital in this sample indicated that the hiring standards for this paramedical group were too high.

SUMMARY AND CONCLUSIONS

In our judgment, the various lists of functions developed include an accurate and tested job description of Radiation Therapists, Radiologic Technicians, X-ray Developers, EKG Technicians, EEG Technicians, and Inhalation Therapists. In addition the distribution of the work time among these functions, by occupation,indicates the relative importance of the various duties and the relative importance of the occupation itself.

Radiologic Technicians represent the largest single occupation in this group and the vacancy ratio for the occupation is also extremely significant (almost 13 percent).

In evaluating their own backgrounds it is understandable why so many of the Technicians believed an average of over 80 percent of their preparation for job performance was derived from professional training and work experience. A typical program available to X-ray Technicians and one that trained the largest single percentage of the personnel included in this sample, exists at Northeastern University. Through June of 1968, approximately 1500 X-ray Technicians have received certificates from Northeastern University, in a program that has been in existence for 15 years. During the first year, students alternate two-week periods of full time on-campus study with four-week periods of clinical instruction and practice in their home hospitals. The second year is spent in gaining clinical experience, and terminates with an on-campus summary and refresher program. A high school education is required to enter this program. The on-campus portion of this 24-month program consists of 16 weeks (one sixth of the course) while 84 weeks are actually spent in the hospitals working and being trained on the job. For this reason, it is understandable why relatively little credit was given to high school and college for preparation for job functions (5.5 percent and 11.0 percent respectively).

Didactic exposure for the EKG and EEG Technicians is also limited. The three facilities offering training in these fields in the Boston Area have programs ranging from six to twelve months of training. Clinical experience predominates in these courses, and classroom work ranges from five percent to 14 percent of the programs. A high school education is usually required.

Although one of the hospitals training EKG and EEG Technicians requires only a high school diploma, it prefers a person with two years of college and a science background. The Navy, however, seems to be successful in training personnel in this field who have attained only an achievement score of 100 in general comprehension and arithmetic. The Navy's program is also the shortest in duration, six months. The U.S. Navy hospital system seems to be capable of adequately training all the personnel in this section, using lower requirements and shorter periods of training.

There is a good deal of similarity in the educational backgrounds of these paramedical personnel. The vast majority have only a high school education (i.e., 92 percent of the Radiation Therapists, 88 percent of the Radiologic Therapists). A significant number of these personnel have less than a complete high school education (25 percent of the EKG Technicians, 10 percent of the EEG Technicians, 17 percent of the Inhalation Therapists, 22 percent of the X-ray Developers). Few have many years of college.

CHAPTER V

Social Worker
Social Worker Aide
Medical Records Personnel
Dietitian
Dietitian Aide
Psychiatric Aide

ANALYSIS OF FUNCTIONS

A total of 26 Social Workers and seven Aides were included in this sample. A review of the first six relatively "easy" functions indicates that 76.7 percent of the Social Workers fulfill these duties, and they spend an average of 38.0 percent of their time on these tasks. In comparison, 79.2 percent of the Aides perform these relatively "easy" functions, spending an average of 42.6 percent of their time on them (Tables 101 and 102). Analysis of the last six "more difficult" functions (7 through 12), indicates that 89.5 percent of the Social Workers perform these tasks, and they spend an average of 50.3 percent of their time on these responsibilities. In comparison 70.8 percent of the Aides perform these same relatively "difficult" functions, spending an average of 45.4 percent of their time on these functions.

Slightly more Social Workers spend more time on the difficult functions than the Aides, and the reverse is true of the Aides performing the easy items. A glance at the pie breakdown of functions on Figures 26 and 27 indicates that the allottment of time to the various functions by Social Workers and Aides is indeed similar.

A review of the first five relatively "easy" functions of 26 Medical Records personnel (Tables 103 and 104) indicates that 56.1 percent of these personnel perform these duties, and they spend an average of 38.7 percent of their time on these tasks. An analysis of the second group of "more difficult" functions (6 through 10), indicates that 60.8 percent of the Medical Records Personnel perform these duties, spending an average of 23.0 percent of their time on these more taxing responsibilities.

It should be noted that a large percentage of these personnel (73.1 percent) spend a relatively large percentage of their time (19.0) on supervisory duties. Supervisory duties (function 13) and reviewing clinical records for completeness (function 5, figure 28) together take up an average of 37.4 percent of the Medical Records Personnel time.

A total of 23 Dietitians and 21 Aides are included in this sample. A review of the first six "easy" functions (Tables 105, 106, and Figures 29 and 30) indicates that 41.3 percent of the Dietitians perform these functions, and they spend an average of 24.6 percent of their time on them. In comparison, 42.1 percent of the Aides perform these same functions, spending an average of 57.3 percent of their time on these duties. An analysis of the six "more difficult" functions (functions 11 through 16), indicates that 68.8 percent of the Dietitians perform these functions and they spend an average of 26.3 percent of their time on them. In comparison, only 8.7 percent of the Aides perform these same more taxing duties, spending an average of only 6.6 percent of their time on these items.

These comparisons clearly show that the ranking of job functions from "easy" to "difficult" are basically accurate, in that relatively fewer Dietitians spend a rather small percentage of their time on the "easy" functions, while a larger number of Dietitians spend more time on the "more difficult" items, compared to time-function analysis of the Aide. This fact is even more apparent when one views the six functions (17 through 22), which are clearly simple, and require no great amount of experience and training, all of which are performed by the Aides only.

Twenty-six Psychiatric Aides are included in this sample (Tables 107 and 108), 23 of whom were employed in two Long-Term Psychiatric Hospitals. A review of the first six relatively "easy" functions indicates that 90.4 percent of these Aides perform these functions, and they spend an average of 39.7 percent of their time on these duties. An analysis of the six "more difficult" duties (7 through 12) indicates that 68.6 percent of the Psychiatric Aides fulfill these reponsibilities, and they spend an average of 35.4 percent of their time in doing so.

One administrator of a psychiatric hospital believed that the Aide's job was grossly underestimated, since an Aide has more contact with the patient than any other person. The Aide's relationship with the patient is extremely crucial, and this is noted on function 12, on Tables 107 and 108. It is noteworthy that nine of the ten Aides in the Private Psychiatric Hospital spend an average of 16 percent of their time on this extremely important relationship while only three of the 13 Aides in the State Hospital spend only an average of 6.8 percent of their time on this duty.

LENGTH OF EMPOYMENT

Table 109 shows a percentage distribution of Social Workers and Aides in various types of hospitals, by number of years employed at present occupation. Forty-five percent of the 26 Social Workers have been employed ten years or more, 23 percent, one year or less. All seven Aides in this sample have been employed three years or less, indicating that this is a relatively new occupation.

Over 60 percent of the 17 Medical Records Librarians have been employed 10 years and over, while over 50 percent of the nine Technicians in this group have been employed 10 years and over (Table 110).

Employment longevity for the Dietitians and Aides seems to be relatively secure. Sixty-five percent of the 23 Dietitians have been employed four years or more, while 80 percent of the 21 Aides have been employed four years or more.(Table 111).

A reverse situation exists for the Psychiatric Aides (Table 112). Only 34.5 percent have been employed four years or more, while over 65 percent have been employed three years or less. It is interesting to note the employment comparison between private and state hospitals on Table 112. All ten Aides, at the Private Hospitals, have been employed three years or less, while only four of the 13 Aides have been employed three years or less at the State Hospital. Almost 70 percent of the Aides have been employed at the State Hospital four years or more.

EDUCATION

Table 113 shows the percentage distribution of Social Workers and Aides in various types of hospitals by last year of school completed and degree obtained. Over 73 percent of the Social Workers have their Master's Degrees, 23.1 percent have their Bachelor's Degree while only 3.8 percent have less than a Bachelor's Degree. More than 71 percent of the Aides have their Bachelor's Degree,while 29 percent have one or two years of college.

Over 50 percent of the Medical Records Librarians have their Bachelor's Degrees, while all have had more than just a high school diploma (Table 115).

Only 47.6 percent of the Aides in this field have their high school diploma, while 33.3 percent of them have one to three years of high school and 10 percent have eight years of schooling or less.

The Private Psychiatric Hospital included in this study employed a completely different type of Aide than the State Hospital. All of the Aides in the Private Hospital were either attending college or had already received their Bachelor's or Master's Degree (Table 116). Almost 47 percent of the Aides at the State Hospital had less than a complete high school education, while 46.1 percent had one or two years of college.

OCCUPATIONAL GOALS

Each person in the sample was asked how far he felt he could progress professionally, given his current educational level (Tables 117 through 120). Of the 26 Social Workers, 46.2 percent felt they would remain at their present job, and 53.8 percent believed they could become supervisors. Of the seven Aides, five believed they would remain at the same level, while one wanted to go on to a Master of Social Worker Degree. The majority of both the 17 Medical Record Librarians and the nine Technicians thought they would remain at their present status, while 47.8 percent believed they could become head of a department (Table 119).

Of the 26 Psychiatric Aides over 61 percent believed they would remain at their present occupation, while over 34 percent believed their position was only temporary. As many as 60 percent of the Aides in the Private Psychiatric Hospital believed their position was temporary, compared to 23 percent in the State Hospital.

PREPARATION FOR JOB PERFORMANCE

We asked all the paramedical personnel in this category for an evaluation of their own backgrounds as a preparation for the tasks they are now performing (Tables 121 through 124).

The 26 Social Workers overwhelmingly believed that graduate school and work experience were most important in preparing them for the work they presently perform (46.9 percent and 34.6 percent respectively, Table 121). The seven Aides allotted a higher percentage to work experience (69.3 percent).

The more highly trained Medical Records Librarians believed that professional training and on-the-job experience to be the most important in preparing them for their present job (37.2 percent and 40.6 percent respectively, Table 122). The lesser trained Technician in this field believed that on-the-job training and work experience to be most important (36.7 percent and 34.4 percent, respectively).

The more highly trained and educated Dietitians believed that college and professional training were the most important factors (40.1 percent and 29.6 percent respectively, Table 123). The much lesser trained and educated Aides believed on-the-job training was most important (73.6 percent). Similarly, on-the-job training was clearly the most important factor to the 26 Psychiatric Aides (54.5 percent, Table 124). Work experience also rated high among people in this position (25.7 percent).

ADMINISTRATION RESPONSES TO QUESTIONNAIRE

In reference to the question on hiring standards for Social Workers and Aides, approximately 30 percent of the hospitals failed to answer. All of those that did respond indicated that the hiring standards for these occupations were just right (Table 125).

Psychiatric Aides had the highest vacancy ratios in this group (17.6 percent, Table 126), while the Social Workers and Aides maintained the lowest ratio (6.9 percent). Most of the respondent hospitals indicated that they (the department, the administration, or both) had control of hiring standards (Table 127). At the same time, these hospitals indicated that these standards were in effect for many years (Table 128).

Despite the above-cited facts, not one of the respondent hospitals felt that any of the hiring standards for any of the paramedical personnel included in this section were too high (Table 125).

SUMMARY AND CONCLUSIONS

A review of the functions and time allotments of Social Workers and Aides indicates that approximately the same percentage of both groups spend about equal amounts of time on similar functions. Both Social Workers and Social Worker Aides are highly trained. Those Aides who have only a Bachelor's Degree (71 percent) for the most part intend to go on for a MSW. The traditional Social Worker and Aide employed by the hospitals has a MSW or will soon have one, and is highly trained and skilled in his professional field. However, a substantial portion of their time is spent on paper work and work not necessarily dependent upon their professional and educational background. There are indications that many of these functions performed by the Social Worker and the highly trained Aide could be performed by individuals with far less educational and professional background.

The most obvious advantage of the semi-professional or non-professional with considerably less educational and professional background in the social work area is that they can live in the neighborhood and can be a member of the relevant minority group. This factor might give the semi-professional or nonprofessional considerable advantage over the professional, from the outset.

We found no attempt, in the sample included in this study, to utilize the services of these semi-skilled or non-professionals in the social work area. A restrictive State law prohibits use of non-professional Social Workers and Aides in this field.

Every hospital included in this sample employed one or more Medical Records Personnel. Few were cetified Medical Records Librarians or held the formal education required by licensing agencies. Yet the personnel fulfilling this occupational category appear to be functioning in an acceptable fashion.

A review of the Dietitians and Aides included in this sample indicates that the Dietitians do spend most of their time on high order functions which utilize their professional and educational background, as opposed to the lesser-trained and educated Aides who spend the greatest percentage of their time on a lower level of duties.

Twenty-three of the Psychiatric Aides included in this sample were employed in two long term hospitals, one private and one state. The priority of functions was somewhat different in each hospital. The Private Non-Profit Hospital employed a person who was generally younger with a short employment record and in the process of being trained and educated in college. The State Hospital was forced to preoccupy its Psychiatric Aides with caretaking duties, while the Private Non-Profit Hospital was able to encourage Aides to form deeper more lasting, personal relationships with the patients.

Some administrators in this field would have liked to employ experienced and successful mothers or fathers as Psychiatric Aides but found them for the most part unavailable. Either the salary was too low, or the working conditions too unattractive.

APPENDIX A

HOSPITALS INCLUDED IN STUDY BY CATEGORIES

GENERAL SHORT TERM NON PROFIT

St. Elizabeth's Hospital
Beth Israel Hospital
Brookline Hospital
New England Medical Center
New England Baptist Hospital
New England Deaconness Hospital
Symmes Hospital
Lynn Hospital

GENERAL SHORT TERM FEDERAL

U.S. Veterans Administration
    Hospital, Jamaica Plain
U.S. Veteran Administration
    Hospital, West Roxbury
U.S. Naval Hospital, Chelsea

SPECIAL LONG TERM NON PROFIT

McLean Hospital
Jewish Memorial Hospital

GENERAL SHORT TERM CITY

Boston City Hospital
Quincy City Hospital
Cambridge City Hospital

GENERAL LONG TERM NON PROFIT

Children's Hospital
Boston Hospital for Women

SPECIAL LONG TERM STATE

Boston State Hospital
Lemuel State Hospital

APPENDIX B

Paramedical Occupations Included In Study

Licensed Practical Nurse
Nurses Aides
Occupational and Manual Arts Therapists
Physical and Corrective Therapists
Recreational Therapists
Microbiology (Technologist & Technician)
Hematology (Technologists & Technician)
Cytology (Technologist & Technician)
Histology (Technologist & Technician)
Biochemistry (Technologist & Technician)
Blood Bank (Technologist & Technician)
Clinical Microscopy (Technician & Lab. Assistant)
Radiation Therapists
Radiologic Technician
X-Ray Developing Machine Operator
Electrocardiograph Technician
Electroencephalograph Technician
Inhalation Therapists
Social Workers & Aides
Medical Record Personnel
Dietitians & Aides
Psychiatric Aide

APPENDIX C

TABLES AND FIGURES

Table No. 1 Total Personnel Interviewed in Various Types of Hospitals by Occupation

JOB TITLE	All Hospitals		Types of Hospitals											
			General Short Term Non Profit		General Short Term - City		General Short Term - Federal		Special Short Term Non Profit		Special Long Term Non Profit		Special Long Term - State	
	Total		Total		Total		Total		Total		Total		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Licensed Practical Nurse	54	100.0	21	38.9	9	16.7	7	12.9	5	9.3	4	7.4	8	14.8
Nurses Aides	51	100.0	14	27.4	14	27.4	12	23.5	4	7.8	4	7.8	3	5.6
Occupational and Manual Arts Therapists	14	100.0	2	14.3	1	7.1	5	35.7	0	----	3	21.4	3	21.4
Physical and Corrective Therapists	25	100.0	7	28.0	2	8.0	7[a]	28.0	2	8.0	4[b]	16.0	3	12.0
Recreational Therapists	6	100.0	0	----	1	16.7	2	33.3	1	16.7	2	33.3	0	----
Microbiology (Technologist & Technician)	27	100.0	10	27.0	5	18.5	7	25.9	2	7.4	1	3.7	2	7.4
Hematology (Technologist & Technician)	32	100.0	13	28.7	6	19.3	6	19.3	4	12.9	0	----	3	9.7
Cytology (Technologist & Technician)	10	100.0	4	40.0	3	30.0	1	10.0	2	20.0	0	----	0	----
Histology (Technologist & Technician)	17	100.0	7	41.2	4	23.5	3	17.6	2	11.7	0	----	1	5.9
Biochemistry (Technologist & Technician)	33	100.0	13	39.4	4	12.1	9	27.3	3	9.1	1	3.0	3	9.1
Blood Bank (Technologist & Technician)	23	100.0	9	39.1	4	17.4	5	21.7	3	13.0	0	----	2	8.7
Clinical Microscopy (Technician & Lab. Assistant)	4	100.0	3	75.0			1	25.0						
Radiation Therapists	12	100.0	4	33.3	3	25.0	3	25.0	1	8.3	0	----	1	8.3
Radiologic Technician	33	100.0	14	42.2	6	18.2	6	18.2	2	6.1	2	6.1	3	9.1
X-Ray Developing Machine Operator	9	100.0	5	55.6	2	22.2	1	11.1	1	11.1	0	----	0	----
Electrocardiograph Technician	16	100.0	7	43.7	3	18.8	2	12.5	2	12.5	0	----	2	12.5
Electroencephalograph Technician	11	100.0	4	36.4	2	18.1	2	18.1	2	18.1	0	----	1	9.1
Inhalation Therapists	17	100.0	10	58.8	3	17.6	3	17.6	1	5.9	0	----	9	----
Social Workers & Aides	34	100.0	15[c]	44.1	3	8.8	2	5.9	4	11.8	4	11.8	6	17.6
Medical Record Personnel	26	100.0	11	42.3	5	19.2	3	11.5	3	11.5	3	11.5	1	3.8
Dietitians & Aides	44[d]	100.0	23	52.3	3	6.8	5	11.3	2	4.5	5	11.4	6	13.6
Psychiatric Aide	26	100.0	1	3.8	0	----	2	7.7	0	----	10	38.5	12	50.0
Total Interviews Per Hospital Classification	524	100.0	197	37.3	83	16.0	94	17.9	46	8.8	43	8.3	61	11.7

[a] Includes 2 therapy aides

[b] Includes 1 therapy aides

[c] Includes 4 social worker aides

[d] Includes 21 dietary aides or food service supervisors

Table No. 2 Percentage of Total Working Time Spent On Different Functions,[1] by Licensed Practical Nurses and Nurses' Aides, and Percentage of L.P.N. and N.A. Performing Each Function, by Type of Hospital

	Types of Hospitals																							
	General Short Term Non Profit				General Short Term - City				General Short Term - Federal				Special Short Term Non Profit				Special Long Term Non Profit				Special Long Term - State			
	L.P.N.		N.A.		L.P.N.		N.A.		L.P.N.		N.A.		L.P.N.		N.A.		L.P.N.		N.A.		L.P.N.		N.A.	
FUNCTIONS	% of Time Spent On Function	% Performing Function	% of Time Spent On Function	% Performing Function	% of Time Spent On Function	% Performing Function	% of Time Spent On Function	% Performing Function	% of Time Spent On Function	% Performing Function	% of Time Spent On Function	% Performing Function	% of Time Spent On Function	% Performing Function	% of Time Spent On Function	% Performing Function	% of Time Spent On Function	% Performing Function	% of Time Spent On Function	% Performing Function	% of Time Spent On Function	% Performing Function	% of Time Spent On Function	% Performing Function
1. Cleaning rooms, beds, answering patients calls	17.7	100.0	23.3	100.0	9.1	100.0	1.9	100.0	13.6	100.0	17.2	100.0	17.6	100.0	14.5	100.0	12.2	100.0	6.8	50.0	6.6	87.5	19.0	100.0
2. Washing and dressing body of deceased persons	1.8	80.1	1.4	85.7	2.4	100.0	1.9	85.7	1.6	100.0	0.5	50.0	0.8	40.0	0.3	25.0	5.5	100.0	0.5	25.0	2.2	37.5	1.3	100.0
3. Recording food and fluid intake and output	6.3	100.0	7.6	100.0	4.4	100.0	5.6	100.0	2.4	100.0	3.1	100.0	7.0	100.0	8.5	100.0	6.0	100.0	19.5	100.0	3.0	50.0	2.3	100.0
4. Feeding patients	10.1	100.0	14.3	100.0	9.5	100.0	17.9	100.0	6.4	100.0	6.3	83.3	5.0	80.0	4.3	75.0	5.2	75.0	5.5	50.0	3.6	50.0	14.7	100.0
5. Performing routine lab. work such as urinalysis	1.1	47.1	2.8	71.4	1.0	55.6	2.3	57.1	0.7	57.1	0.8	58.3	3.0	40.0	0.8	25.0	---	---	---	---	2.8	62.5	2.0	66.6
6. Bathing, dressing, & assisting patients in walking & turning	17.3	95.2	18.9	100.0	16.5	100.0	23.8	100.0	18.3	100.0	19.6	100.0	10.8	100.0	23.3	100.0	32.5	100.0	9.5	50.0	14.7	50.0	25.0	100.0
7. Tube Feeding	2.0	76.1	0.4	14.3	1.5	100.0	0.2	21.4	2.3	100.0	1.8	75.0	1.2	40.0	1.3	25.0	7.2	100.0	---	---	1.8	50.0	---	---
8. Ordering drugs for patients	1.4	47.6	---	---	3.6	88.8	---	---	1.0	57.1	0.6	25.0	0.4	20.0	---	---	3.5	100.0	3.0	25.0	6.0	87.5	---	---
9. Taking & recording temperature, pulse, respiration rate	5.6	100.0	8.4	100.0	3.0	100.0	7.3	71.4	6.0	100.0	7.3	100.0	6.8	80.0	10.3	100.0	4.0	100.0	8.8	50.0	4.0	100.0	8.3	100.0
10. Taking & recording blood pressure	3.0	100.0	0.2	21.4	2.0	100.0	1.8	21.4	2.6	100.0	0.8	50.0	2.8	100.0	0.8	75.0	2.0	100.0	---	---	1.8	100.0	---	---
11. Applying compress, ice bag, hot water bottle	3.9	95.2	2.9	85.7	1.5	100.0	2.4	92.8	2.1	100.0	1.7	100.0	4.8	100.0	7.8	100.0	2.0	100.0	3.0	25.0	4.7	100.0	1.7	100.0
12. Dressing wounds	2.3	95.2	0.4	28.5	1.8	88.8	1.6	21.4	5.3	100.0	0.6	33.3	1.0	100.0	0.5	50.0	1.0	100.0	---	---	3.6	100.0	---	---
13. Giving enemas, douches, alcohol rubs, massages	4.6	95.2	6.4	92.8	5.1	88.8	3.9	78.5	14.7	100.0	5.8	83.3	2.0	100.0	9.3	100.0	1.5	100.0	6.0	50.0	4.2	87.5	4.5	100.0
14. Assembling and using such equipment as catheters, trachotomy tubes, and oxygen suppliers	4.7	90.4	0.6	28.5	3.8	100.0	0.5	35.7	3.7	100.0	1.7	58.3	3.8	100.0	0.3	25.0	2.5	100.0	8.3	25.0	3.1	87.5	---	---
15. Observing patients & reporting adverse reactions to physicians or nurses	5.6	100.0	5.4	92.8	2.6	100.0	4.9	92.8	2.6	100.0	3.4	91.6	7.2	100.0	7.5	75.0	5.7	100.0	3.0	25.0	12.0	100.0	7.0	100.0
16. Administering specified medication & noting time & amount on patients' chart	2.3	76.2	0.5	14.2	17.8	100.0	---	---	6.9	85.7	0.6	25.0	17.8	80.0	---	---	3.2	100.0	3.0	25.0	22.9	100.0	---	---
17. Sterilizing equipment & supplies using germicide, sterilizer, or autoclave	0.9	28.6	3.0	28.5	2.2	77.7	5.8	85.7	3.0	85.7	2.1	66.6	1.2	40.0	5.5	50.0	2.5	75.0	20.3	100.0	0.6	25.0	8.3	100.0
18. Setting up IV equipment, discontinuing IV service	3.3	95.2	0.3	7.1	1.9	88.8	1.4	57.1	3.3	100.0	0.8	58.3	2.6	100.0	3.8	75.0	3.0	100.0	---	---	0.1	12.5	---	---
19. Setting up and using BIRD respirator	1.6	47.6	0.5	14.2	3.3	55.5	0.3	21.4	3.4	100.0	0.5	50.0	2.4	20.0	0.3	25.0	1.0	50.0	---	---	2.8	75.0	---	---
20. Research	---	---	---	---	0.8	22.2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
21. Teaching	0.6	23.8	---	---	2.0	11.1	---	---	0.7	28.5	1.2	25.0	0.8	20.0	---	---	---	---	2.0	25.0	0.1	12.5	---	---
22. Supervisory	0.6	9.5	---	---	4.0	33.3	---	---	0.7	28.5	11.7	33.3	0.2	20.0	---	---	1.7	25.0	---	---	---	---	---	---
23. Desk work	1.4	14.3	0.4	7.1	---	---	0.3	7.1	1.6	14.2	3.8	50.0	---	---	1.3	25.0	---	---	---	---	3.3	12.5	0.3	33.3
24. Transporting patients	1.0	4.8	1.0	7.1	0.1	11.1	3.3	21.4	---	---	9.3	16.6	2.4	20.0	---	---	---	---	---	---	---	---	---	---
All Functions	100.0	---	100.0	---	100.0	---	100.0	---	100.0	---	100.0	---	100.0	---	100.0	---	100.0	---	100.0	---	100.0	---	100.0	---

[1] May not add to 100 percent because of rounding

Table No. 3 Percentage of Total Working Time Spent on Different Functions[1] by Licensed Practical Nurses and Nurses' Aides, and Percentage of L.P.N. and N.A. Performing Each Function

	L.P.N.		N.A.	
	Percentage Of Total Working Time Spent On Different Functions	Percentage Performing Function	Percentage Of Total Working Time Spent On Different Functions	Percentage Performing Function
1. Cleaning rooms, beds, answering patients calls	13.7	98.0	18.4	96.0
2. Washing and dressing body of deceased person	2.1	78.0	1.2	69.0
3. Recording food and fluid intake and output	5.1	93.0	6.7	100.0
4. Feeding patients	7.7	87.0	11.9	90.0
5. Performing routine lab. work such as urinalysis	1.4	46.0	1.8	55.0
6. Bathing, dressing & assisting patients in walking & turning	17.5	91.0	20.4	96.0
7. Tube Feeding	2.2	78.0	0.7	29.0
8. Ordering drugs for patients	2.4	61.0	0.4	8.0
9. Taking & Recording temperature, pulse, respiration rate	5.0	98.0	8.0	90.0
10. Taking & recording blood pressure	2.5	100.0	0.8	29.0
11. Applying compress, ice bag, hot water bottle	3.3	98.0	2.8	88.0
12. Giving enemas, douches, alcohol rubs, massages	5.4	94.0	5.8	84.0
13. Dressing wounds	2.6	96.0	0.7	25.0
14. Assembling and using such equipment as catheters, trachotomy tubes, and oxygen suppliers	3.9	94.0	1.0	35.0
15. Observing patients & reporting adverse reactions to physicians or nurses	5.8	100.0	4.9	86.0
16. Administering specified medication & noting time & amount on patients' chart	10.0	87.0	0.5	12.0
17. Sterilizing equipment & supplies using germicides sterilizer, or autoclave	1.5	46.0	5.4	65.0
18. Setting up IV equipment, discontinuing IV service	2.4	83.0	0.9	37.0
19. Setting up and using BIRD respirator	2.3	56.0	0.4	24.0
20. Research	0.1	4.0	---	----
21. Teaching	0.7	17.0	0.4	8.0
22. Supervisory	1.1	17.0	2.8	8.0
23. Desk work	1.2	9.0	1.2	20.0
24. Intensive Care Unit	0.6	6.0	---	----
All Functions	100.0	---	100.0	----

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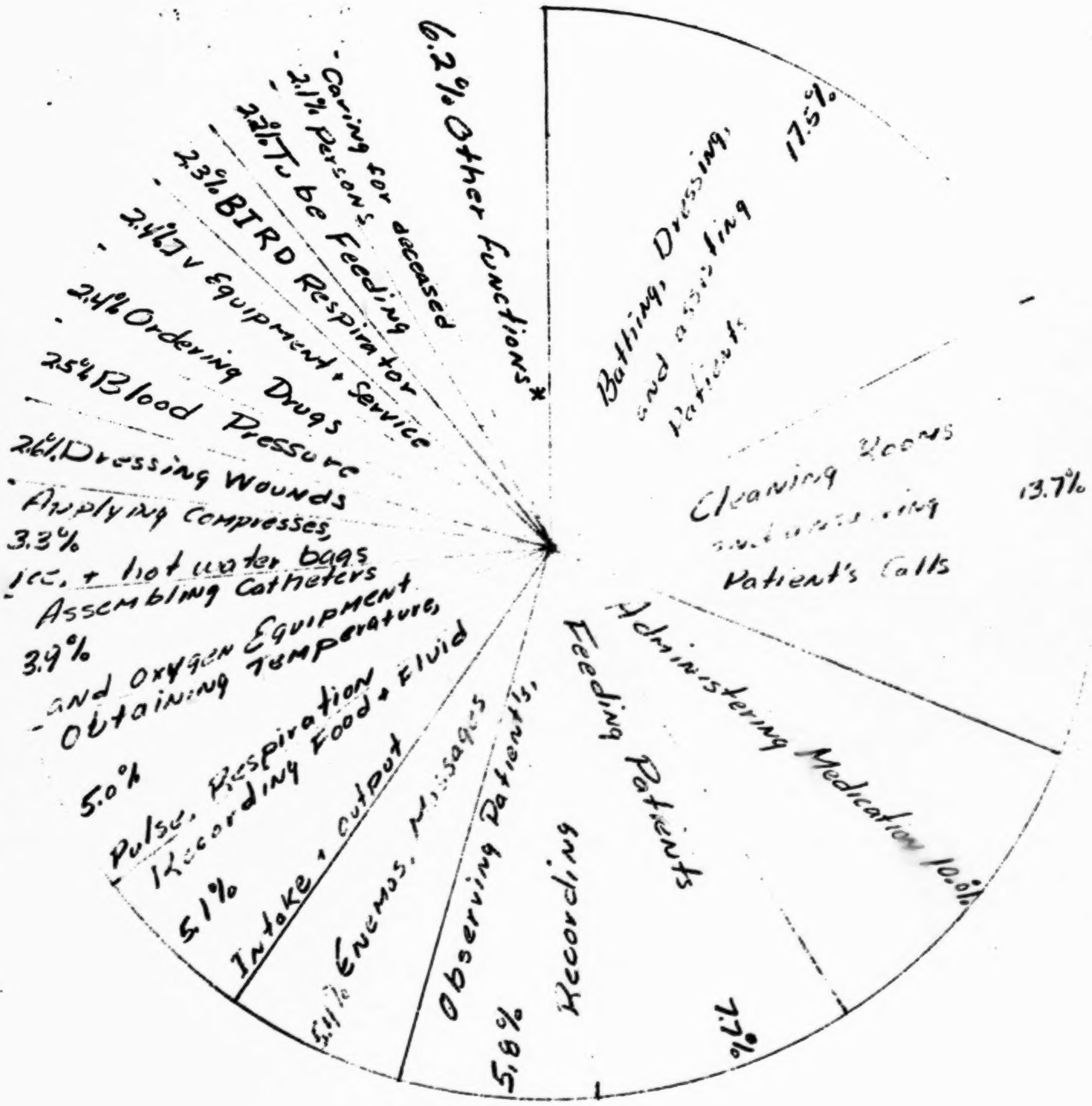
[1] May not add to 100 percent because of rounding

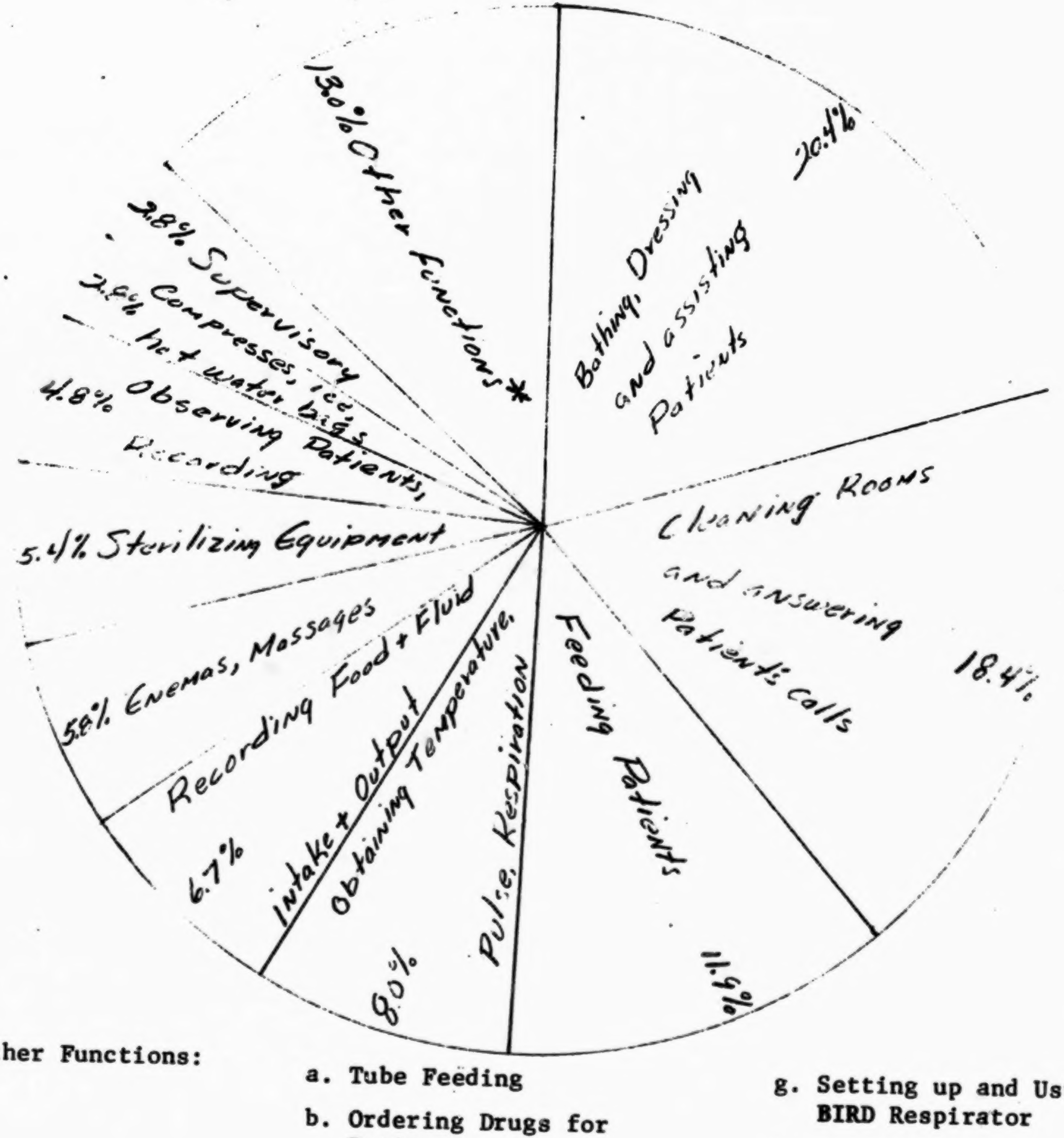
Figure No. 1 Percentage Distribution of Working Time Spent on Job Functions by Licensed Practical Nurses



*Other Functions:

a. Teaching
b. Research
c. Intensive Care Unit
d. Sterilizing Equipment
e. Lab. Work
f. Desk Work
g. Supervisory

Figure No. 2 Percentage Distribution of Working Time Spent on Job Functions by Nurses' Aides



*Other Functions:

a. Tube Feeding
b. Ordering Drugs for Patients
c. Taking & Recording Blood Pressure
d. Dressing Wounds
e. Administering Drugs
f. Setting up and Using IV Equipment
g. Setting up and Using BIRD Respirator
h. Teaching
i. Lab. Work
j. Caring For Deceased Persons
k. Desk Work
l. Assembling Equipment

Table No. 4 Percentage Distribution of Licensed Practical Nurses and Nurses' Aides In Various Types of Hospitals by Number of Years Employed at Present Occupation[1]

YEARS EMPLOYED AT PRESENT OCCUPATION	Types of Hospitals												All Hospitals	
	General Short Term Non Profit		General Short Term - City		General Short Term - Federal		Special Short Term Non Profit		Special Long Term Non Profit		Special Long Term - State			
	L.P.N.	N.A.	L.P.N.	N.A.	L.P.N.	N.A.	L.P.N.	N.A.	L.P.N.	N.A.	L.P.N.	N.A.	L.P.N.	N.A.
Less than 1 year	19.0	21.4	0	7.1	0	16.7	0	0	0	0	12.5	33.3	13.7	9.2
1 to 3 years	47.6	42.8	77.7	21.4	14.3	50.0	80.0	25.0	0	50.0	0	33.3	37.2	40.7
4 to 6 years	19.0	7.1	0	7.1	28.6	16.7	0	0	0	25.0	0	0	9.8	11.1
7 to 9 years	4.8	7.1	0	21.4	14.3	8.3	0	0	0	0	25.0	33.3	11.8	7.4
10 to 14 years	4.8	21.4	11.1	28.6	28.6	0	0	0	25.0	0	25.0	0	13.7	13.0
15 years and over	4.8	0	11.1	14.3	14.3	8.3	20.0	75.0	75.0	25.0	37.5	0	13.7	18.5
Total Number of Personnel	21	14	9	14	7	12	5	4	4	4	8	3	54	51

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[1] May not add to 100 percent because of rounding

Table No. 5   Work Experience of Licensed Practical Nurses and Nurses' Aides by Type of Hospital

TYPE OF HOSPITAL	Average Number Of Years Employed At Present Occupation											
	Total Average		At this Hospital		At Other Hospital		At Nursing Home		Private Duty		Percentage Previously Employed At Other Health Related Occupation	
	L.P.N.	N.A.	L.P.N.	N.A.	L.P.N.	N.A.	L.P.N.	N.A.	L.P.N.	N.A.	L.P.N.	N.A.
General Short Tern Non Profit	3.7	4.5	1.7	3.3	2.0	1.1	0	0.1	0	0	33.0	21.4
General Short Term - City	6.2	8.7	2.2	8.1	4.0	0.3	0	0.5	0	0	22.2	1.5
General Short Term - Federal	8.5	4.3	5.9	3.1	2.6	1.2	0	0	0	0	29.0	8.3
Special Short Term Non Profit	6.0	15.7	2.0	11.2	0.2	0.6	1.8	0	2.0	4.0	20.0	0
Special Long Term Non Profit	14.3	6.6	10.8	3.4	1.8	0.5	0	0.5	1.8	2.2	50.0	50.0
Special Long Term - State	13.8	3.7	11.4	3.5	2.4	0	0	0.1	0	0	0	0
All Hospitals	7.2	6.6	4.5	5.2	2.3	0.8	0.2	0.3	0.3	0.5	28.0	19.0

Table No. 6 Percentage Distribution of Licensed Practical Nurses and Nurses' Aides In Various Types of Hospitals by Whether Training Occurred Shortly After High School

WHEN OCCUPATIONAL TRAINING OCCURRED	Types of Hospitals												All Hospitals	
	General Short Term Non Profit		General Short Term - City		General Short Term - Federal		Special Short Term Non Profit		Special Long Term Non Profit		Special Long Term - State			
	L.P.N.	N.A.	L.P.N.	N.A.	L.P.N.	N.A.	L.P.N.	N.A.	L.P.N.	N.A.	L.P.N.	N.A.	L.P.N.	N.A.
Training taken shortly after high school:	86.0	64.0	55.0	20.0	86.0	83.0	100.0	25.0	50.0	25.0	38.0	33.0	72.0	49.0
Training taken more than five years after high school:	14.0	36.0	45.0	80.0	14.0	17.0	0	75.0	50.0	75.0	62.0	67.0	28.0	51.0

Table No. 7 Percentage Distribution of Licensed Practical Nurses In Various Types of Hospitals by School and Location of Training

NAME OF SCHOOL IN BOSTON OR LOCATION OF TRAINING	Types of Hospitals						All Hospitals
	General Short Term Non Profit	General Short Term - City	General Short Term - Federal	Special Short Term Non Profit	Special Long Term Non Profit	Special Long Term - State	
	L.P.N.	L.P.N.	L.P.N.	L.P.N.	L.P.N.	L.P.N.	L.P.N.
Girls' Trade	14.0	33.0	0	0	0	13.0	13.0
Sheppard Gill	29.0	11.0	14.0	80.0	25.0	13.0	26.0
Lemuel Shattuck	5.0	22.0	0	0	0	25.0	9.0
Boston State	0	11.0	0	0	0	36.0	7.0
Other Hospitals or L.P.N. Schools in Massachusetts	33.0	22.0	43.0	0	50.0	13.0	28.0
Out of State	19.0	0	43.0	20.0	25.0	0	17.0

Table No. 8 Percentage Distribution of Nurses' Aides in Various Types of Hospitals, by Place Where Training Was Obtained

PLACE WHERE TRAINING WAS OBTAINED	Types of Hospitals						All Hospitals
	General Short Term Non Profit	General Short Term - City	General Short Term - Federal	Special Short Term Non Profit	Special Long Term Non Profit	Special Long Term - State	
	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Nurses' Aides training at hospital where employed:	64.0	86.0	50.0	75.0	75.0	100.0	73.0
Nurses' Aide training at other hospital:	36.0	14.0	50.0	25.0	25.0	0	27.0

Table No. 9 Percentage Distribution of Licensed Practical Nurses and Nurses' Aides In Various Types of Hospitals by Last Year of School Completed

LAST YEAR OF SCHOOL COMPLETED	Types of Hospitals												All Hospitals	
	General Short Term Non Profit		General Short Term - City		General Short Term - Federal		Special Short Term Non Profit		Special Long Term Non Profit		Special Long Term - State			
	L.P.N.	N.A.	L.P.N.	N.A.	L.P.N.	N.A.	L.P.N.	N.A.	L.P.N.	N.A.	L.P.N.	N.A.	L.P.N.	N.A.
Elementary:														
8 years or less	0	0	0	7.0	14.0	0	0	0	0	0	0	0	2.0	2.0
High School:														
1-3 years	0	36.0	0	14.0	0	25.0	0	50.0	0	50.0	25.0	33.0	4.0	30.0
4 years	90.0	50.0	100.0	71.0	86.0	67.0	80.0	50.0	75.0	25.0	63.0	33.0	85.0	57.0
Percent of total having attained High School Diplomas */	100.0	64.0	100.0	78.0	86.0	75.0	100.0	50.0	100.0	50.0	75.0	66.0	94.0	67.0
College:														
2 years or less	10.0	14.0	0	7.0	0	8.0	20.0	0	25.0	25.0	12.0	33.0	9.0	11.0

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*/ A few have attained high school diplomas without having had 4 formal years of high school by taking night courses -- others have had 4 years of high school and did not graduate.

Table No. 10 Percentage Distribution of Licensed Practical Nurses in Various Types of Hospitals by Occupational Goal Which They May Hope to Attain

OCCUPATIONAL LEVEL	Types of Hospitals						All Hospitals
	General Short Term Non Profit	General Short Term - City	General Short Term - Federal	Special Short Term Non Profit	Special Long Term Non Profit	Special Long Term - State	
	L.P.N.	L.P.N.	L.P.N.	L.P.N.	L.P.N.	L.P.N.	L.P.N.
	(Percent)	(Percent)	(Percent)	(Percent)	(Percent)	(Percent)	(Percent)
Present	43.0	55.5	86.0	60.0	50.0	87.0	59.2
A little higher e.g., staff nurse	38.0	22.2	14.0	20.0	0	0	22.2
Would like to advance with a little more training	19.0	22.2	0	20.0	50.0	13.0	18.5

Table No. 11 Percentage Distribution of Nurses' Aides in Various Types of Hospitals by Occupational Goal Which They May Hope to Attain

OCCUPATIONAL LEVEL	Types of Hospitals						All Hospitals
	General Short Term Non Profit	General Short Term - City	General Short Term - Federal	Special Short Term Non Profit	Special Long Term Non Profit	Special Long Term - State	
	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Present	57.1	71.4	66.6	100.0	50.0	66.7	66.6
Could go a little higher with present training	7.1	14.2	25.0	--	50.0	--	15.6
Would like to advance with a little more training	28.5	--	8.3	--	--	33.3	11.7
Planning to enter L.P.N. or R.N. training soon	7.1	14.2	--	--	--	--	5.8

Table No. 12 Extent to Which Educational Background Prepared Licensed Practical Nurses and Nurses' Aides For The Functions Presently Performed Distributed According to Respondents Estimation[1]

EDUCATIONAL BACKGROUND	All Hospitals		Types of Hospitals											
			General Short Term Non Profit		General Short Term - City		General Short Term - Federal		Special Short Term Non Profit		Special Long Term Non Profit		Special Long Term - State	
	L.P.N.	N.A.	L.P.N.	N.A.	L.P.N.	N.A.	L.P.N.	N.A.	L.P.N.	N.A.	L.P.N.	N.A.	L.P.N.	N.A.
High School	11.6	7.9	12.0	12.1	14.3	4.3	2.9	9.5	9.0	0	16.3	12.5	14.4	0
College	1.3	.5	1.0	1.1	0	0	0	0	10.0	0	0	0	0	0
Occupational Training	59.2	0	61.0	0	57.0	0	46.4	0	59.0	0	81.3	0	57.5	0
Work Experience	17.7	60.4	11.0	54.4	28.6	75.7	50.7	65.0	9.0	50.0	0	27.5	9.4	0
On-the-Job Training [2]	9.8	31.2	15.0	32.3	0	20.0	0	25.0	12.0	50.0	2.3	50.5	18.7	100.0

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[1] May not add to 100 percent because of rounding

[2] Includes Nurses' Aide training

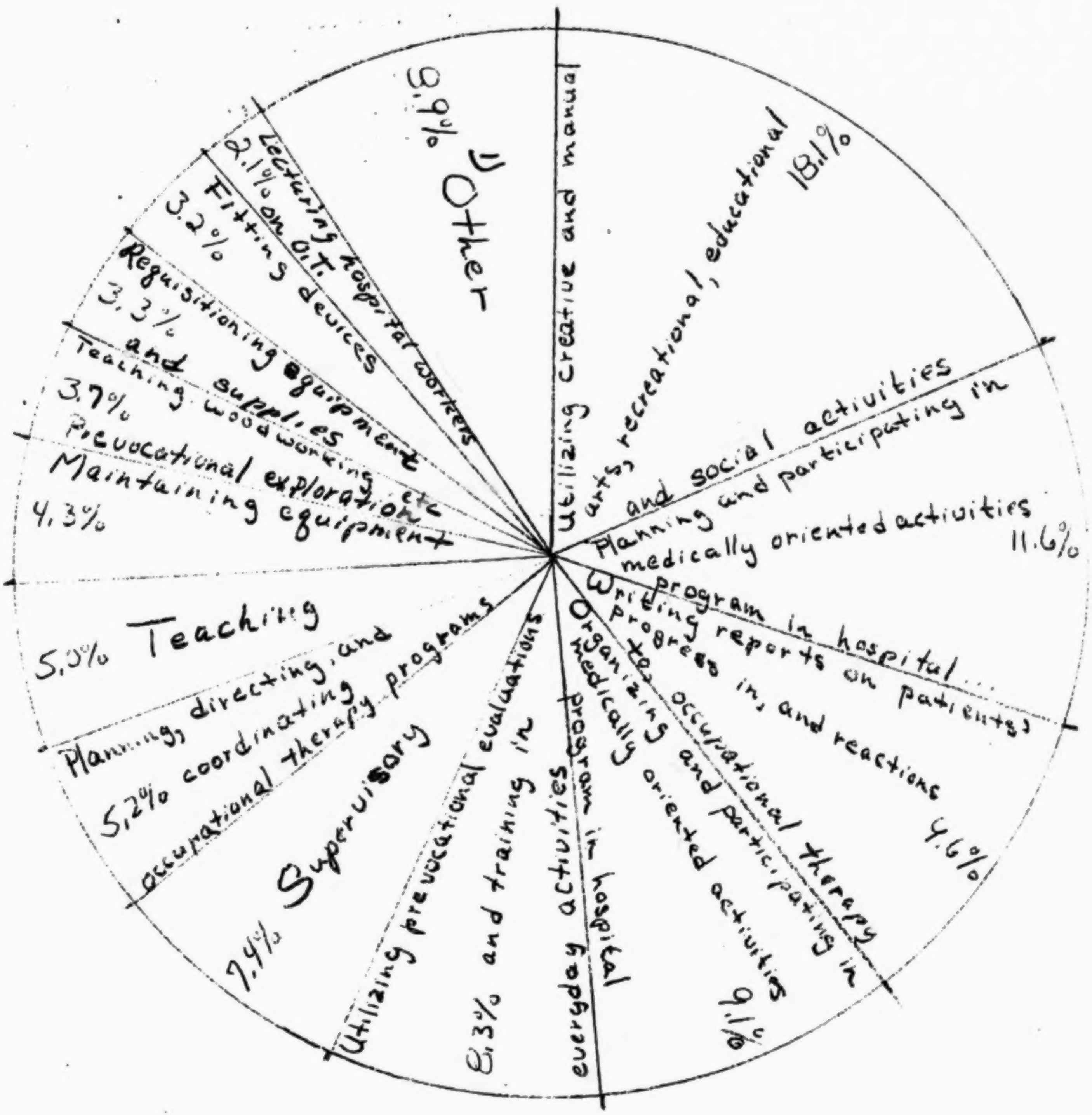
Table No. 13 Percentage of Total Working Time of Occupational And Manual Therapists Spent On Various Functions By Types of Hospitals

FUNCTIONS	All Hospitals	Types of Hospitals					
		General Short Term Non Profit	General Short Term - City	General Short Term - Federal	Special Short Term Non Profit	Special Long Term Non Profit	Special Long Term - State
1. Requisiting necessary equipment and supplies	3.3	3.0	1.0	2.6	NONE	5.0	3.7
2. Maintaining equipment in good working condition	4.3	2.5	2.0	6.4		1.0	6.3
3. Writing reports on patients' progress in and reactions to occupational therapy	9.6	8.5	5.0	10.2		1.7	19.0
4. Organizing and participating in medical acitivites programs in hospital to rehabilitate patients who are physically or mentally ill	9.1	9.0	26.0	4.6		13.7	6.7
5. Planning and participating as described in No. 4	11.6	9.0	26.0	11.2		14.0	6.7
6. Utilizing creative and manual arts, recreational, educational, and social activities	18.1	16.0	28.0	14.0		42.3	.7
7. Lecturing interns, medical and nursing students and other hospital workers on phases of occupational therapy	2.1	5.0	0	1.4		2.0	1.7
8. Fitting devices, such as splints and braces following physician's instructions	3.2	9.0	5.0	3.0		0	1.7
9. Utilizing prevocational evaluations and training in every day activities such as personal care and homemaking	8.3	12.5	5.0	2.2		4.0	21.0
10. Planning, directing and coordinating occupational therapy programs	5.2	5.0	0	3.2		12.0	3.3
11. Research	.6	0	0	0		1.0	.2
12. Teaching	5.0	7.5	2.0	4.0		1.3	10.0
13. Supervisory	7.4	3.0	0	12.6		1.7	10.0
14. Teaching: woodworking, photography, metalworking, agric-electricity, graphic arts, house planning, etc. Prevocational exploration	8.3	---	---	23.2		---	---
15. Other	3.7	10.2	2.0	1.0		1.3	7.3
Total No. of Persons	14	2	1	5		3	3

Table No. 14 Percentage Of Occupational And Manual Therapists Performing Various Functions by Types of Hospitals

FUNCTIONS	All Hospitals	Types of Hospitals					
		General Short Term Non Profit	General Short Term - City	General Short Term - Federal	Special Short Term Non Profit	Special Long Term Non Profit	Special Long Term - State
1. Requisiting necessary equipment and supplies	93	100	100	100	NONE	100	67
2. Maintaining equipment in good working condition	64	50	100	60		33	100
3. Writing reports on patients' progress in and reactions to occupational therapy	100	100	100	100		100	100
4. Organizing and participating in medical activities programs in hospital to rehabilitate patients who are physically or mentally ill	79	100	100	60		100	67
5. Planning and participating in medical activities programs in hospital to rehabilitate patients who are physically or mentally ill	85	100	100	80		100	67
6. Utilizing creative and manual arts, recreational, educational, and social activities	71	100	100	60		100	33
7. Lecturing interns, medical and nursing students and other hospital workers on phases of occupational therapy	57	100	---	40		67	67
8. Fitting devices, such as splints and braces following physician's instructions	36	50	100	40		---	33
9. Utilizing prevocational evaluations and training in every day activities such as personal care and homemaking	79	100	100	40		100	100
10. Planning, directing and coordinating occupational therapy programs	57	50	---	60		100	33
11. Research	14	---	---	---		33	33
12. Teaching	57	100	100	40		33	100
13. Supervisory	71	50	---	80		67	100
14. Teaching: Woodworking, photography, metalworking, electricity, graphic arts, house planning, etc. Prevocational exploration	14	---	---	40		---	---
15. Other	43	50	---	20		33	100
Total No. of Persons	14	2	1	5		3	3

Figure No. 3 OCCUPATIONAL AND MANUAL ARTS THERAPISTS



1/ Other: 11. Research
15. Other

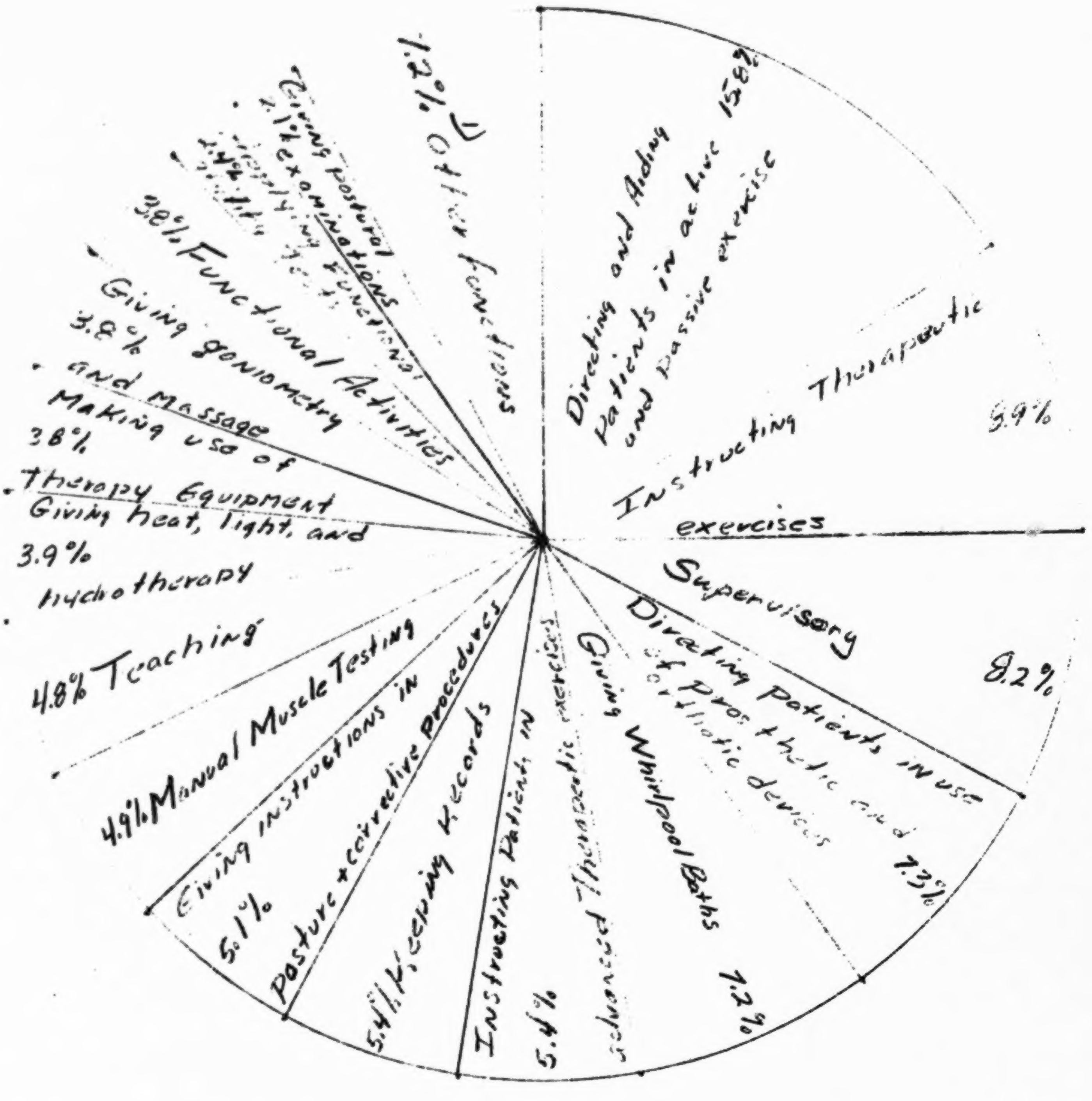
Table No. 15 **Percentage of Total Working Time of Physical and Corrective Therapists and Aides Spent on Various Functions by Types of Hospitals**

FUNCTIONS	All Hospitals		Types of Hospitals											
			General Short Term Non Profit		General Short Term - City		General Short Term Federal		Special Short Term Non Profit		Special Long Term Non Profit		Special Long Term - State	
	P.T.	Aide	P.T.	Aide	P.T.	Aide	P.T.	Aide	P.T.	Aide	P.T.	Aide	P.T.	Aide
1. Giving whirlpool and contrast baths, applying moist packs	7.2	30.4	4.6	53.5	14.5	NONE	1.2	22.5	1.5	NONE	11.7	0	16.3	NONE
2. Giving heat, light and hydrotherapy	3.9	8.6	5.4	8.0	1.5		1.4	11.0	2.5		11.7	5.0	1.7	
3. Making use of equipment, such as ultraviolet and infared generators, diathemy and ultrasonic machine	3.8	7.0	5.6	9.0	2.5		1.4	6.0	3.0		8.3	5.0	1.7	
4. Giving postural examinations	2.1	1.4	2.4		2.5		0.2	1.0	4.5		4.7	5.0	.33	
5. Giving gonimetry and massage	3.8	7.2	4.4	9.5	3.0		0.6	1.0	4.5		11.7	5.0	.33	
6. Providing electrical muscle stimulation	1.8	1.0	3.6		1.0		0.6		3.5		1.3	5.0	.33	
7. Giving instructions in posture and prodedures to be continued at home	5.1	1.4	2.8	1.0	19.0		1.2		6.5		9.0	5.0	1.0	
8. Directing patients in care and use of wheelchairs, braces canes, crutches, and prosthetic and orthotic devices	7.3	4.6	2.6		16.0		14.6	9.0	6.5		4.0	5.0	1.0	
9. Instructions patient in therapautic excersizes	8.9	3.4	8.2	1.0	5.0		15.8	7.5	6.5		4.3		7.3	
10. Manual muscle testing	4.9	1.2	3.4		5.5		8.2	0.5	6.5		4.7	5.0	.33	
11. Functional Activities	3.8	1.0	6.0	1.0	3.0		0.8	1.5	6.5		4.0		3.7	
12. Instructing patients in advanced therapeutic excersizes	5.4	0.6	4.4	1.0	2.0		4.2	0.5	6.5		3.0		13.0	
13. Keeping records of treatment given and patients response and progress	5.4	2.6	7.0		7.0		5.0	4.0	6.5		6.3	5.0	1.7	
14. Directing and aiding patients in active and passive excersizes muscle reeducation and gait, offering functional training utilizing pulleys and weights, steps and included surface	15.8	15.2	9.2	8.0	11.5		36.2	27.5	6.5		5.6	5.0	12.0	
15. Applying diagnostic and prognostic muscle nerce, joint and functional ability tests.	2.4	1.0	2.2		1.5		1.2	2.5	6.5		1.3		3.7	
16. Performed special treatment of neurological problems	1.5	0.4	2.8		2.0		1.0	1.0			1.7		.33	
17. Research	0.2		0.6				0.2							
18. Teaching	4.8		4.8		2.0		2.2		10.5		2.0		10.0	
19. Supervisory	8.2		17.6		0.5		1.0		2.5		7.3		14.7	
20. Other	5.1	14.6	5.0	9.0			3.8	5.0	11.5			50.0	11.3	
Total Number of Persons	20	5	5	2	2		5	2	2		3	1	3	

Table No. 16 Percentage of Physical and Corrective Therapists and Aides Performing Various Functions by Types of Hospitals

FUNCTIONS	All Hospitals		Types of Hospitals											
			General Short Term Non Profit		General Short Term - City		General Short Term Federal		Special Short Term Non Profit		Special Long Term Non Profit		Special Long Term - State	
	P.T.	Aide	P.T.	Aide	P.T.	Aide	P.T.	Aide	P.T.	Aide	P.T.	Aide	P.T.	Aide
1. Giving whirlpool and contrast baths, applying moist packs	90.0	80.0	100.0	100.0	100.0	NONE	60.0	100.0	100.0	NONE	100.0	0	100.0	NONE
2. Giving heat, light, and hydrotherapy	90.0	100.0	100.0	100.0	100.0		60.0	100.0	100.0		100.0	100.0	100.0	
3. Making use of equipment, such as ultravoilet and infrared lamps, low voltage generators, diathemy and ultrasonic machines	90.0	100.0	100.0	100.0	100.0		60.0	100.0	100.0		100.0	100.0	100.0	
4. Giving postural examinations	60.0	40.0	100.0	0	50.0		20.0	50.0	100.0		66.7	100.0	33.3	
5. Giving goniometry and massage	80.0	100.0	100.0	100.0	100.0		60.0	100.0	100.0		100.0	100.0	33.3	
6. Providing electrical muscle stimulation	65.0	20.0	100.0	0	50.0		60.0	0	100.0		33.3	100.0	33.3	
7. Giving instructions in posture and procedures to be continued at home	85.0	40.0	100.0	50.0	100.0		80.0	0	100.0		66.7	100.0	66.7	
8. Directing patients in care and use of wheelchairs, braces, canes, crutches, and prosthetic and orthotic devices	85.0	40.0	100.0	0	100.0		80.0	50.0	100.0		66.7	100.0	66.7	
9. Instructing patients in therapeutic exercises	95.0	40.0	100.0	50.0	100.0		80.0	50.0	100.0		100.0	0	100.0	
10. Manual muscle testing	80.0	40.0	100.0	0	100.0		80.0	50.0	100.0		66.7	100.0	33.3	
11. Functional activities	75.0	60.0	100.0	50.0	100.0		40.0	100.0	100.0		66.7	0	66.7	
12. Instructing patients in advanced therapeutic exercises	75.0	40.0	100.0	50.0	100.0		60.0	50.0	100.0		66.7	0	33.3	
13. Keeping records of treatment given and patients response and progress	100.0	40.0	100.0	0	100.0		100.0	50.0	100.0		100.0	100.0	100.0	
14. Directing and aiding patients in active and passive exercise muscle reeducation, and gait. Offering functional training utilizing pulleys and weights, steps and inclined surface	90.0	100.0	100.0	100.0	100.0		100.0	100.0	100.0		66.7	100.0	66.7	
15. Applying diagnostic and prognostic muscle nerve, joint and functional ability tests	70.0	20.0	80.0	0	100.0		60.0	50.0	100.0		33.3	0	66.7	
16. Performing special treatment of neurological problems	50.0	20.0	80.0	0	100.0		20.0	50.0	0		66.7	0	33.3	
17. Research	10.0	0	20.0	0	0		20.0	0	0		0	0	0	
18. Teaching	85.0	0	20.0	0	100.0		100.0	0	100.0		66.7	0	66.7	
19. Supervisory	70.0	0	80.0	0	50.0		60.0	0	100.0		66.7	0	66.7	
20. Other	45.0	80.0	40.0	100.0	0		60.0	50.0	100.0		0	100.0	66.7	
Total Number of Person	20	5	5	2	2		5	2	2		3	1	3	

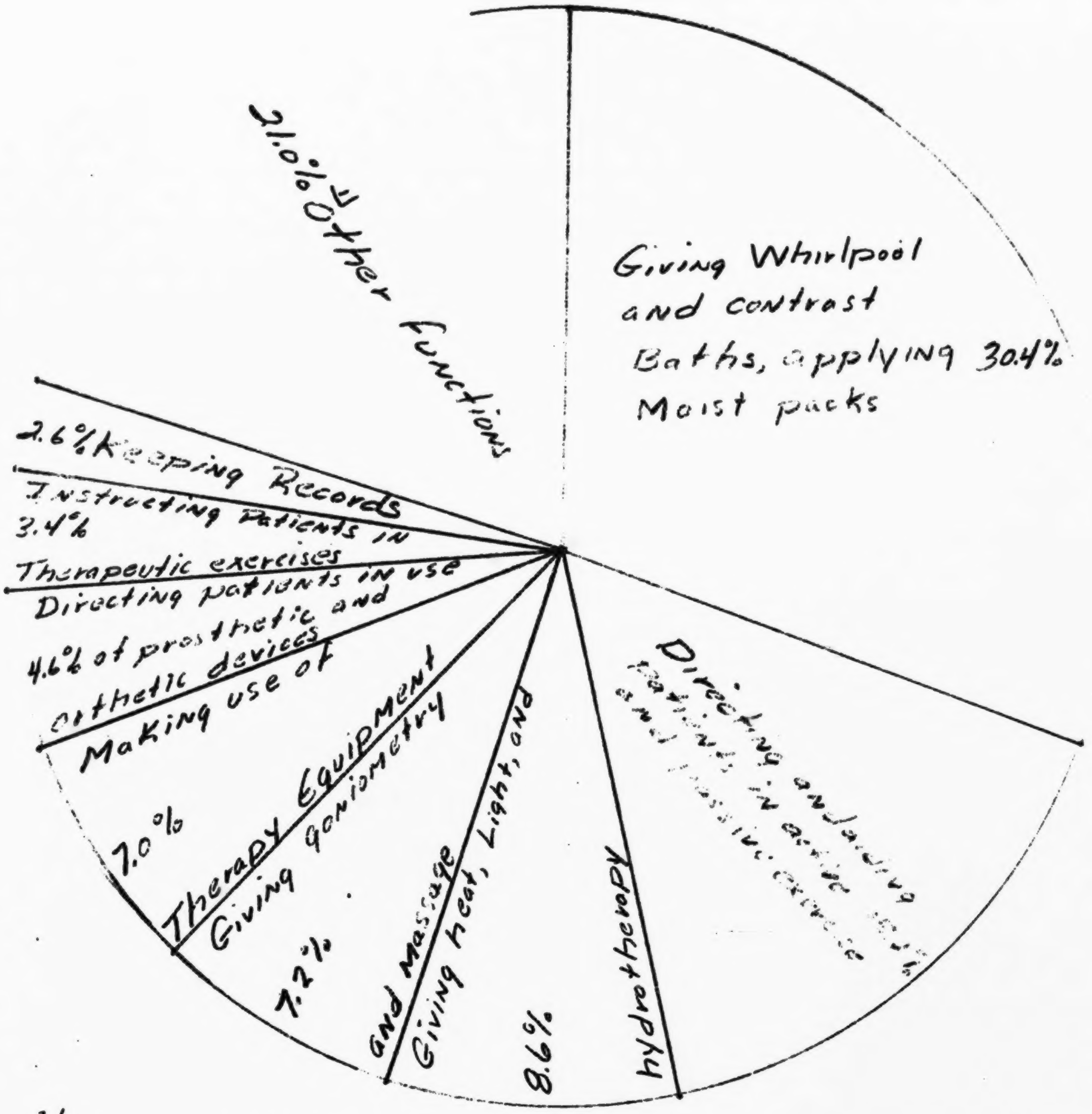
Figure No. 4 PHYSICAL AND CORRECTIVE THERAPISTS



1/ Other:

6. Providing electrical muscle stimulation
16. Performing special treatment of neurological problems
17. Research
20. Other

Figure No. 5 PHYSICIAL THERAPISTS AIDES



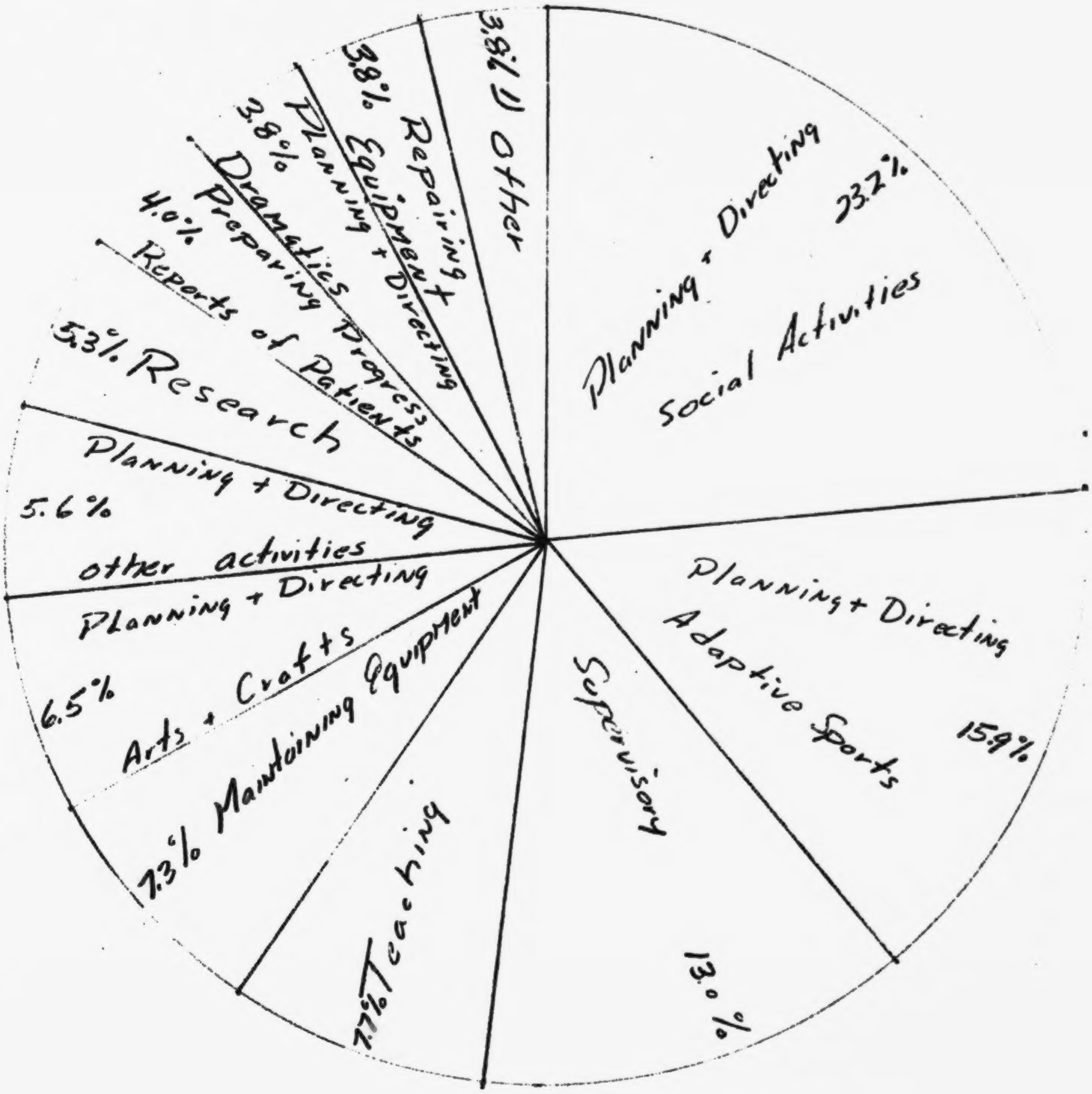
1/ Other:

4. Giving postural examinations
6. Providing electrical muscle stimulation
7. Giving instruction in posture procedures to be continued at home
10. Manual muscle
11. Functional activities
12. Instructing patients in advanced therapeutic exercises
15. Applying diagnostic and prognostic muscle, nerve, joint and functional ability tests
16. Performing special treatment of neurological problems
20. Other

Table No. 17 Percentage of Recreational Therapists Performing Various Functions and Percentage of Total Working Time Spent On These Functions in all Hospitals

FUNCTIONS	Percentage Performing Function	Percentage of Total Working Time Spent On Function
1. Directing and organizing medically approved programs in accordance with patients' needs, capabilities and interests, such as:		
Adaptive Sports	83.5	10.0
Dramatics	33.3	1.1
Social Activities	100.0	14.7
Arts and Crafts	66.6	3.5
Other	66.6	3.5
2. Planning same:		
Adaptive Sports	66.6	5.9
Dramatics	50.0	2.7
Social Activities	83.5	8.5
Other	33.3	2.1
3. Preparing reports of physician or treatment team, describing patients' reactions, and symptons indicative of progress or regressions.	66.6	4.0
4. Maintaining equipment	83.5	7.3
5. Repairing equipment	50.0	3.8
6. Research	16.7	5.3
7. Teaching	66.6	7.7
8. Supervisory	50.0	13.0
9. Other	50.0	3.8
Total Number of Persons	6	

Figure No. 6   RECREATIONAL THERAPISTS



1/ Other: Other

Table No. 18 Percentage Distribution of Occupational and Manual Arts Therapists in Various Types of Hospitals by Number of Years Employed at Present Occupation[1]

YEARS EMPLOYED AT PRESENT OCCUPATION	All Hospitals	Types of Hospitals					
		General Short Term Non Profit	General Short Term - City	General Short Term - Federal	Special Short Term Non Profit	Special Long Term Non Profit	Special Long Term - State
Less than 1 year							
1 to 3 years	28.7	0	100.0	20.0	0	33.3	33.3
4 to 6 years	14.3	0	0	0	0	33.3	33.3
7 to 9 years	7.1	50.0	0	0	0	0	0
10 to 14 years	7.1	50.0	0	0	0	0	0
15 years and over	42.8	0	0	80.0	0	33.3	33.3
Total Number of Personnel	14	2	1	5	0	3	3

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[1] May not add to 100 percent because of rounding.

Table No. 19 Percentage Distribution of Physical and Corrective Therapists and Aides In Various Types of Hospitals by Number of Years Employed at Present Occupation[1/]

YEARS EMPLOYED AT PRESENT OCCUPATION	All Hospitals		Types of Hospitals											
			General Short Term Non Profit		General Short Term - City		General Short Term - Federal		Special Short Term Non Profit		Special Long Term Non Profit		Special Long Term - State	
	Thera	Aide	Thera	Aide	Thera	Aide	Thera	Aide	Thera	Aide	Thera	Aide	Thera	Aide
Less than 1 year	5.0	20.0			50.0			50.0						
1 to 3 years	30.0	40.0	40.0	50.0			20.0	50.0	100.0				33.3	
4 to 6 years	10.0	20.0		50.0			20.0						33.3	
7 to 9 years	10.0	20.0			50.0		20.0					100.0		
10 to 14 years	10.0		20.0				20.0							
15 years and over	35.0		40.0				20.0				100.0		33.3	
Total Number of Personnel	20	5	5	2	2	0	5	2	2	0	3	1	3	0

[1/] May not add to 100 percent because of rounding

Table No. 20 Percentage Distribution of Recreational Therapists in Various Types of Hospitals By Number of Years Employed at Present Occupation[1]

Years Employed at Present Occupation	All Hospitals	TYPES OF HOSPITALS				
		General Short Term Non Profit	General Short Term City	General Short Term Federal	Special Short Term non Profit	Special Long Term Non Profit and State
Less than 1 yr	0	0	0	0	0	0
1 to 3 yrs.	50.0	0	0	0	100.0	100 . 0
4 to 6 yrs.	33.3	0	100.0	50.0	0	0
7 to 9 yrs.		0	0	0	0	0
10 to 14 yrs.		0	0	0	0	0
15 yrs & Over	16.7	0	0	50.0	0	0
Total Number of Personnel	6	0	1	2	1	2

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[1] May not add to 100 percent because of rounding.

Table No. 21 Percentage Distribution of Occupational and Manual Therapists in Various Types of Hospitals by Last Year of School Completed and Degree Obtained

LAST YEAR OF SCHOOL COMPLETED	All Hospitals	Types of Hospitals					
		General Short Term Non Profit	General Short Term - City	General Short Term - Federal	Special Short Term Non Profit	Special Long Term Non Profit	Special Long Term - State
Elementary:							
8 years or less							
High School:							
1 - 3 years	7.1						33.3
4 years	7.1			20.0			
High School: Diploma	14.3			40.0			
College:							
2 years of less	7.1			20.0			
3 years	7.1					33.3	
4 years	35.7	50.0		20.0		33.3	66.7
5 or more years	35.7	50.0	100.0	40.0		33.3	
Associate Degree							
Bachelors Degree	71.4	100.0	100.0	40.0		100.0	66.7
Master of Arts Degree	7.1			20.0			
Other Degree							

Table No. 22 Percentage Distribution of Physical and Corrective Therapists and Aides In Various Types of Hospitals by Last Year of School Completed and Degree Obtained

LAST YEAR OF SCHOOL COMPLETED	All Hospital		Types of Hospitals											
			General Short Term Non Profit		General Short Term - City		General Short Term - Federal		Special Short Term Non Profit		Special Long Term Non Profit		Special Long Term - State	
	Thera	Aide	Thera.	Aide	Thera.	Aide	Thera.	Aide	Thera.	Aide	Thera.	Aide	Thera	Aide
Elementary:														
8 years or less		20.0										100.0		
High School:														
1 - 3 years		20.0		50.0										
4 years		40.0		50.0				50.0						
High School: Diploma		60.0		100.0		0		50.0		0		0		0
College:														
2 years or less														
3 years	10.0		20.0								33.3			
4 years	85.0	20.0	80.0		100.0	0	80.0	50.0	100.0	0	66.7	0	100.0	0
5 or more years	.5						20.0							
Associate Degree	.5	20.0	20.0					50.0						
Bachelors Degree	90.0		80.0		100.0		80.0		100.0		100.0		100.0	
Master of Arts Degree	.5						20.0							
Other Degree														

Table No. 23 Percentage Distribution of Recreational Therapists in Various Types of Hospitals by Last Year of School Completed and Degree Obtained

LAST YEAR OF SCHOOL COMPLETED	All Hospitals	Types of Hospitals					
		General Short Term Non Profit	General Short Term - City	General Short Term - Federal	Special Short Term Non Profit	Special Long Term Non Profit	Special Long Term - State
Elementary:							
8 years or less							
High School:							
1 - 3 years							
4 years							
High School: Diploma							
College:							
2 years of less							
3 years							
4 years	100.0		100.0	100.0	100.0	100.0	
5 or more years							
Associate Degree							
Bachelors: Degree	100.0		100.0	100.0	100.0	100.0	
Master of Arts Degree							
Other Degree							

Table No. 24 Percentage Distribution of Occupational and Manual Arts Therapists in Various Types of Hospitals by Occuptational Level Which They May Hope to Attain

OCCUPATIONAL LEVEL	All Hospitals	Types of Hospitals					
		General Short Term Non Profit	General Short Term - City	General Short Term - Federal	Special Short Term Non Profit	Special Long Term Non Profit	Special Long Term - State
Present	28.6			40.0		33.3	33.3
Supervisor of Department	50.0	50.0	100.0	60.0		33.3	33.3
Teaching	21.4	50.0				33.3	33.3

TABLE No. 25 Percentage Distribution of Physical and Corrective Therapists and Aids In Various Types of Hospitals by Occupational Level Which They Hope To Attain

OCCUPATIONAL LEVEL	All Hospitals		Types of Hospitals													
			General Short Term Non Profit		General Short Term - City		General Short Term - Federal		Special Short Term Non Profit		Special Long Term Non Profit		Special Long Term - State	
	Thera	Aide	Thera	Aide	Thera	Aide	Thera	Aide	Thera	Aide	Thera	Aide	Thera	Aide
Present	26.1	80.0	60	100.0				50.0			66.7	100.0	33.3	
Supervisor of Department	60.9	20.0	40		100.0		100.0	50.0	100.0		33.3		66.7	
Teaching	13.0				50.0		20.0						33.3	

Table No. 26 Percentage Distribution of Recreational Therapists in Various Types of Hospitals by Occupational Level Which They May Hope to Attain

OCCUPATIONAL LEVEL	All Hospitals	Types of Hospitals					
		General Short Term Non Profit	General Short Term - City	General Short Term - Federal	Special Short Term Non Profit	Special Long Term Non Profit	Special Long Term - State
Present	83.3		100.0	100.0	100.0	50.0	
Supervisor of Department	16.7					50.0	

Table No. 27 Extent to Which Educational Background Prepared Occupational and Manual Arts Therapists for the Functions Presently Performed[1/]

OCCUPATIONAL BACKGROUND	All Hospitals	Types of Hospitals					
		General Short Term Non Profit	General Short Term - City	General Short Term - Federal	Special Short Term Non Profit	Special Long Term Non Profit	Special Long Term - State
High School	9.1			6.6			18.3
College	29.1	26.5		33.0		45.0	18.3
Professional Training	36.7	31.5	50.0	47.2		16.6	38.3
On-the-Job Training	16.1	41.5	50.0	2.4		20.0	6.7
Work Experience	11.6			10.6		18.3	18.3
Other							

[1/] May not add to 100 percent because of rounding

Table No. 28 Extent to Which Educational Background Prepared Physicial and Corrective Therapists and Aides For The Functions Presently Performed[1/]

OCCUPATIONAL BACKGROUND	All Hospital		Types of Hospitals											
			General Short Term Non Profit		General Short Term - City		General Short Term - Federal		Special Short Term Non Profit		Special Long Term Non Profit		Special Long Term - State	
	Thera	Aide	Thera.	Aide	Thera.	Aide	Thera.	Aide	Thera.	Aide	Thera.	Aide	Thera.	Aide
High School	3.1	11.0	9.0		5.5							50.0		
College	44.9		34.0		22.5		74.0		20.0		20.0		71.7	
Professional Training	24.7	21.0	21.0		49.5			50.0	55.0		51.7		8.3	
On-the-Job Training	16.4	23.0	29.0	40.0	22.5		10.0		25.0		3.3	50.0	10.0	
Work Experience	10.9	45.0	7.0	60.0			16.0	50.0			25.0		10.0	
Other														

[1/] May not add to 100 percent because of rounding

Table No. 29 Extent to Which Educational Background Prepared Recreational Therapists

For The Functions Presently Performed[1/]

OCCUPATIONAL BACKGROUND	All Hospitals	Types of Hospitals					
		General Short Term Non Profit	General Short Term - City	General Short Term -Federal	Special Short Term Non Profit	Special Long Term Non Profit	Special Long Term - State
High School	2.5			5.0		2.5	
College	46.7		80.0	30.0	80.0	25.0	
Professional Training	4.1				10.0	7.5	
On-the-Job Training	17.5		10.0	25.0	10.0	22.5	
Work Experience	29.2		10.0	40.0		42.5	
Other							

[1/] May not add to 100 percent because of rounding

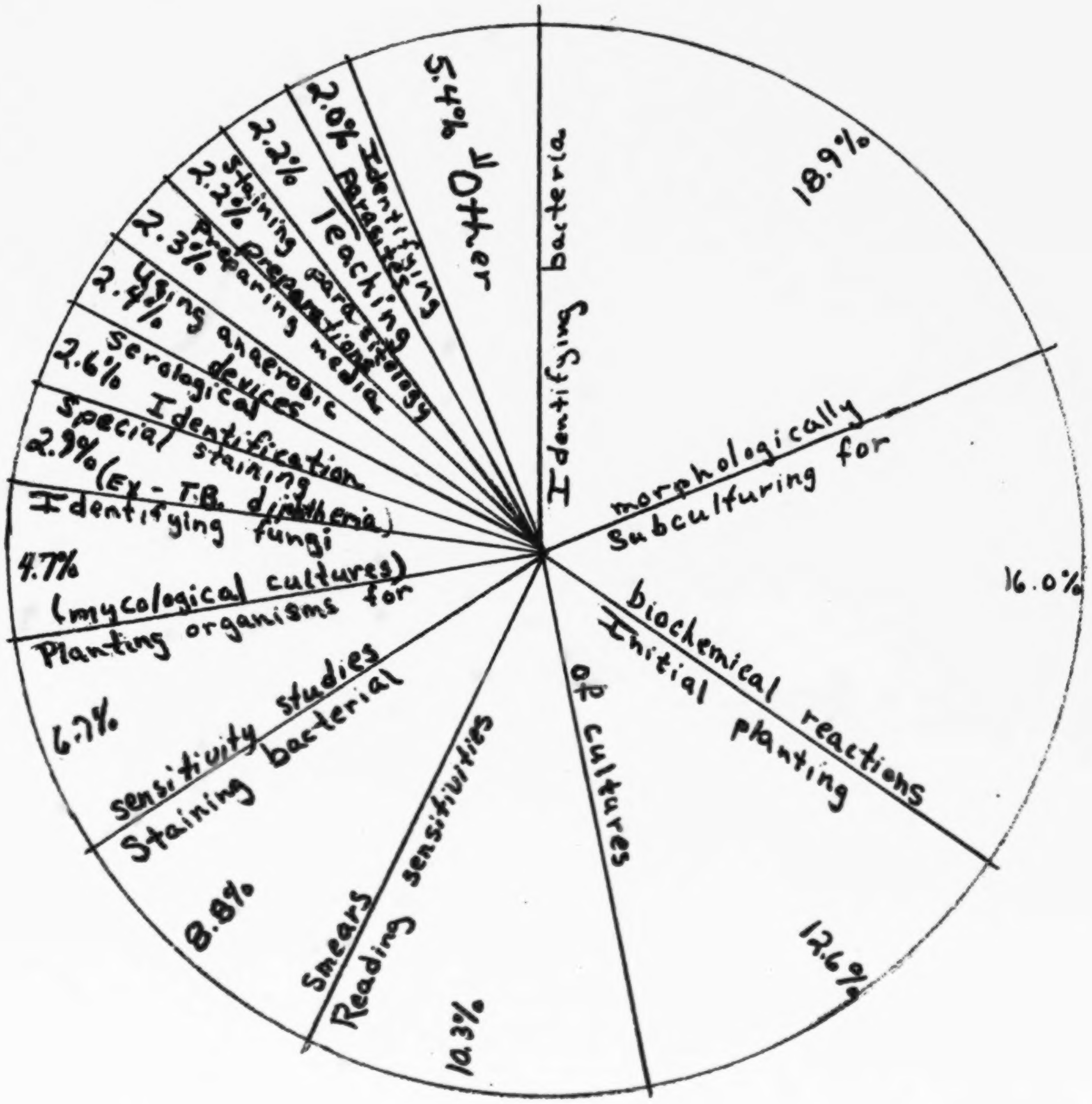
Table No. 30 Percentage of Total Working Time of Microbiology Technologists and Technicians Spent on Various Functions, By Types of Hospitals

FUNCTIONS	All Hospitals		Types of Hospitals											
			General Short Term Non Profit		General Short Term - City		General Short Term Federal		Special Short Term Non Profit		Special Long Term Non Profit		Special Long Term - State	
	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech
1. Initial planting of cultures	2.6	15.9	9.4	10.8	NONE	20.8	2.0	12.2	NONE	11.0	38.0	NONE	14.0	50.0
2. Staining bacterial smears	8.8	6.9	8.2	3.6		9.4	18.0	8.0		4.0	6.0		5.0	10.0
3. Preparing media	2.3	6.4	2.8	5.6		4.8	1.0	5.2		18.5	1.0		2.0	1.0
4. Reading sensitivities	10.3	4.3	11.0	5.6		7.6	1.0	3.5		5.0	12.0		14.0	5.0
5. Planting organisms for sensitivity studies	6.7	4.4	7.0	2.4		7.8	0	4.6		4.0	0		19.0	1.0
6. Collecting specimens directly from patients, under supervision of pathologist or physician	1.6	2.4	2.2	2.6		0.4	0	5.2		0	1.0		1.0	0
7. Collecting wound culture specimens directly from patients under supervision of pathologist or physician	0.1	0.6	0	.6		0	0	1.3		0	0		0	1.0
8. Collecting other specimens directly from patients	0.9	2.2	1.2	2.6		0	0	3.5		0	1.0		0	8.0
9. Staining parasitology preparations	2.2	1.5	3.0	2.4		0.4	2.0	1.5		2.5	1.0		0	1.0
10. Identifying bacteria morphologically	18.9	13.0	13.8	9.4		12.4	56.0	15.7		18.0	12.0		14.0	8.0
11. Subsulturing for biochemical reaction	16.0	7.8	19.4	9.0		13.0	5.0	4.0		5.5	12.0		14.0	3.0
12. Using anaerobic devices	2.4	2.9	3.4	4.0		2.8	0	2.2		3.5	1.0		1.0	1.0
13. Special staining (ex. T.B. diphtheria)	2.9	4.1	3.2	2.4		7.8	1.0	3.5		2.5	1.0		5.0	1.0
14. Doing fluorescent antibody studies	0.1	0.6	0	1.2		0	1.0	0.2		2.5	0		0	0
15. Serological identification	2.6	3.0	4.0	2.4		4.0	0	2.3		3.5	1.0		0	4.0
16. Identifying parasites	2.0	2.1	2.0	3.2		0.6	5.0	2.2		3.5	1.0		0	0
17. Identifying fungi	4.7	2.8	5.6	3.0		2.0	0	2.8		3.0	1.0		9.0	6.0
18. Preparing vaccines and sera	0	0.5	0	0.2		0.4	0	0.2		2.5	0		0	0
19. Is your lab. evaluated by Mass. Dept. of Public Health	0	0	0	0		0	0	0		0	0		0	0
20. Research	0.7	1.4	1.0	0.8		0	0	2.0		5.0	0		1.0	0
21. Teaching	2.7	3.4	2.2	6.0		1.6	5.0	3.2		2.5	2.0		0	2.0
22. Supervisory	0.1	8.7	0.2	13.8		3.0	0	13.5		0	0		0	1.0
23. Other	1.9	5.2	1.4	9.4		2.4	1.0	6.5		0	6.0		1.0	0
Total Number of Persons	8	19	5	5	0	5	1	6	0	2	1	0	1	1

Table No. 31 **Percentage of Microbiology Technologists and Technicians Performing Various Functions, by Types of Hospitals**

FUNCTIONS	All Hospitals		Types of Hospitals											
			General Short Term Non Profit		General Short Term - City		General Short Term Federal		Special Short Term Non Profit		Special Long Term Non Profit		Special Long Term - State	
	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech
1. Initial planting of cultures	100.0	94.7	100.0	100.0	NONE	80.0	100.0	100.0	NONE	100.0	100.0	NONE	100.0	100.0
2. Staining bacterial smears	100.0	100.0	100.0	100.0		100.0	100.0	100.0		100.0	100.0		100.0	100.0
3. Preparing media	75.0	84.2	60.0	80.0		60.0	100.0	100.0		100.0	100.0		100.0	100.0
4. Reading sensitivities	100.0	89.5	100.0	100.0		60.0	100.0	100.0		100.0	100.0		100.0	100.0
5. Planting organisms for sensitivity studies	75.0	94.7	80.0	100.0		80.0	100.0	100.0		100.0	100.0		100.0	100.0
6. Collecting specimens directly from patients, under supervision of pathologist or physician	37.5	52.6	20.0	80.0		40.0	67.0	67.0		0	100.0		100.0	0
7. Collecting wound culture specimens directly from patients, under supervision of pathologist or physician	12.5	10.5	0	20.0		0	16.7	16.7		0	100.0		0	0
8. Collecting other specimens directly from patients	37.5	26.3	40.0	40.0		0	33.3	33.3		0	100.0		0	100.0
9. Staining parasitology preparations	37.5	68.4	20.0	80.0		20.0	100.0	100.0		50.0	100.0		0	100.0
10. Identifying bacteria morphologically	100.0	94.7	100.0	100.0		80.0	100.0	100.0		100.0	100.0		100.0	100.0
11. Subsulturing for biochemical reaction	100.0	94.7	100.0	100.0		80.0	100.0	100.0		100.0	100.0		100.0	100.0
12. Using anaerobic devices	87.5	94.7	100.0	100.0		80.0	100.0	100.0		100.0	100.0		100.0	100.0
13. Special staining (ex., T.B., diphtheria)	87.5	89.5	80.0	100.0		80.0	100.0	100.0		50.0	100.0		100.0	100.0
14. Doing fluorescent antibody studies	25.0	15.8	20.0	20.0		0	16.7	16.7		50.0	0		0	0
15. Serological identification	75.0	89.5	100.0	60.0		100.0	100.0	100.0		100.0	100.0		0	100.0
16. Identifying parasites	50.0	78.9	40.0	100.0		40.0	100.0	100.0		100.0	100.0		0	0
17. Identifying fungi	87.5	94.7	100.0	100.0		80.0	100.0	100.0		100.0	100.0		100.0	100.0
18. Preparing vaccines and sera	0	21.1	0	20.0		20.0	16.7	16.7		50.0	0		0	0
19. Is your lab. evaluated by Mass. Dept. of Public Health	0	0	0	0		0	0	0		0	0		0	0
20. Research	37.5	15.8	40.0	20.0		0	16.7	16.7		50.0	0		100.0	0
21. Teaching	50.0	78.9	60.0	100.0		60.0	83.3	83.3		50.0	100.0		0	100.0
22. Supervisory	25.0	52.6	40.0	80.0		60.0	33.3	33.3		0	0		0	100.0
23. Other	75.0	57.9	60.0	60.0		40.0	100.0	100.0		0	100.0		100.0	0
Total Number of Persons	8	19	5	5	0	5	1	6	0	2	1	0	1	1

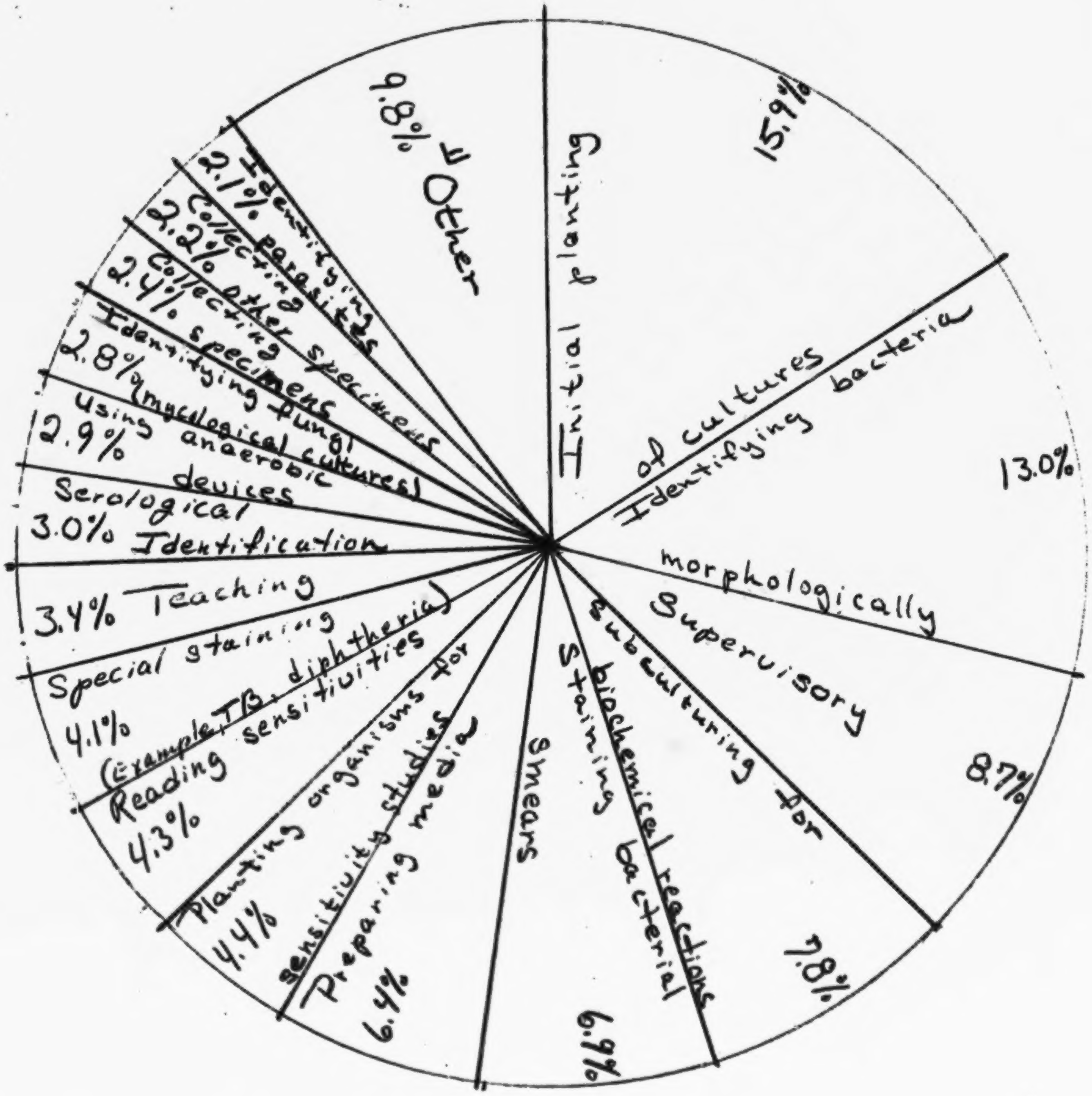
Figure No. 7 MICROBIOLOGY TECHNOLOGISTS



[1] Other:

6. Collecting specimens directly from patients, under supervision of pathologist or physician
7. Collecting wound culture specimens directly ... physicians
8. Collecting other specimens directly from patients
14. Doing fluorescent antibody studies
20. Research
22. Supervisory
23. Other

Figure No. 8 MICROBIOLOGY TECHNICIANS



1/ Other:

6. Collecting specimens directly from patients, under supervision of pathologist or physician
9. Staining parasitology preparations
14. Doing fluorescent antibody studies
18. Preparing vaccines and sera
20. Research

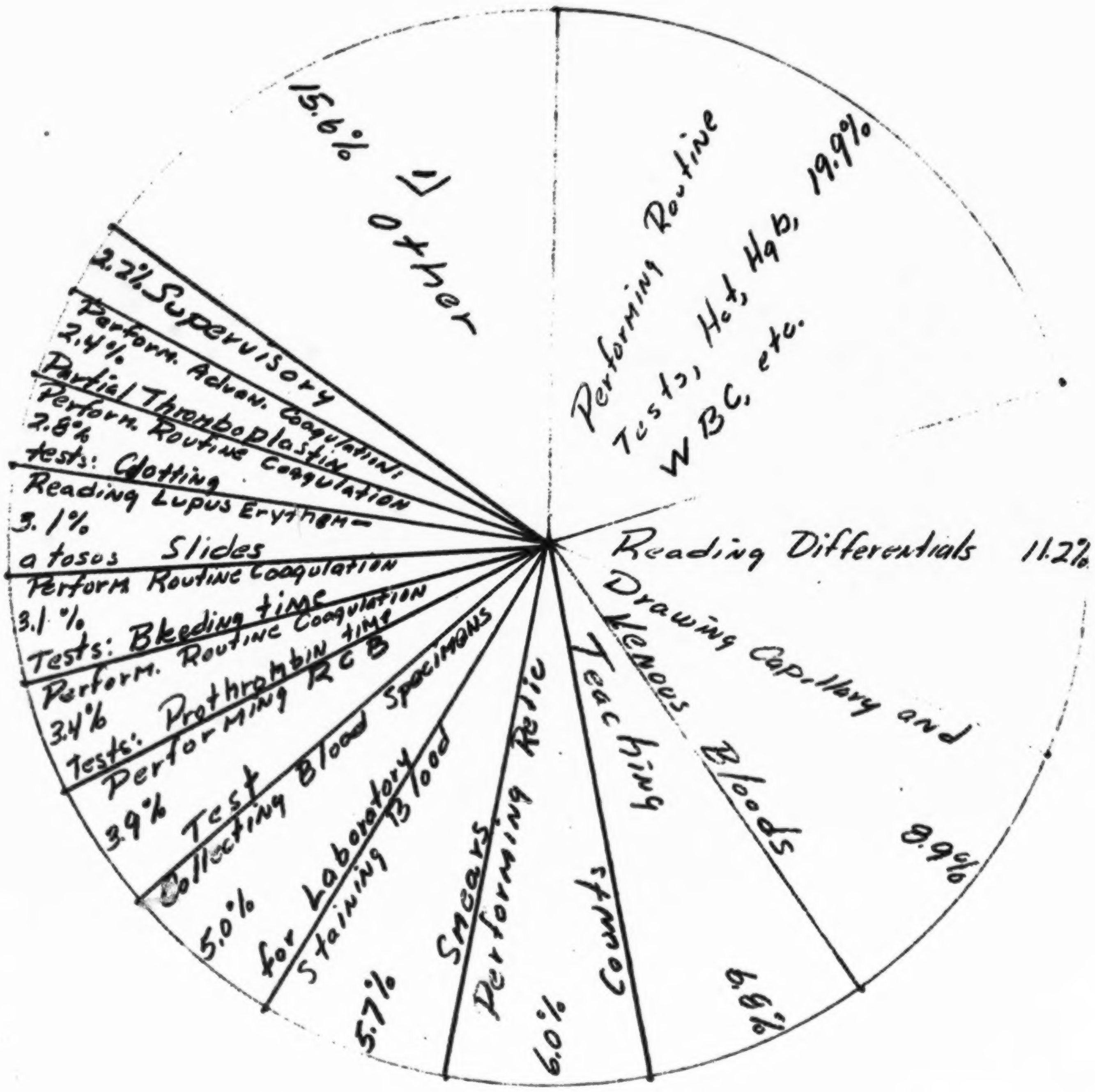
Table No. 32 Percentage of Total Working Time of Hematology Technologists and Technicians Spent on Various Functions, By Types of Hospitals

FUNCTIONS	All Hospitals		Types of Hospitals											
			General Short Term Non Profit		General Short Term - City		General Short Term Federal		Special Short Term Non Profit		Special Long Term Non Profit		Special Long Term - State	
	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech
1. Drawing capillary and venous bloods.	8.9	8.0	9.0	8.8	8.0	6.6	3.7	6.0	19.0	4.8	NONE	NONE	15.0	17 0
2. Staining Blood smears.	5.7	6.5	4.8	6.4	9.0	5.2	5.7	4.7	7.0	11.0			5.0	4.0
3. Collecting blood specimens for laboratory	5.0	5.5	6.5	6.6	8.0	3.0	3.7	6.0		4.8			5.0	8.0
4. Performing routine tests, Hct, Hgb, WBC, etc.	19.9	28.4	11.5	33.8	50.0	17.6	20,3	53.0	27.0	18.3			15.0	28.0
5a Performing routine test.														
a. Bleeding time	3.1	2.1	2.0	1.8	9.0	2.8	1.7	2.3	2.0	1.0			7.0	3.5
b. Clotting time	2.8	2.9	3.0	4.7	2.0	3.0	1.0	0.7	3.0	1.0			8.0	1.5
c. Prothrombin time	3.4	3.2	6.5	5.1	2.0	2.4	1.0	2.7	3.0	1.0			0	1.5
6. Reading differentials	11.2	10.6	7.0	7.2	2.0	21.0	20.0	15.3	7.0	12.0			15.0	11.5
7. Performing RBC test	3.9	4.6	2.3	3.6	1.0	4.0	7.3	1.3	2.0	12.0			5.0	2.0
8. Performing Petic Counts	6.0	5.1	2.5	4.3	1.0	3.4	10.7	3.0	2.0	12.0			15.0	2.0
9a Performing advanced coagulation tests														
a. Serial Thrombin time	1.6	0.7	3.8	0.9	0	1.6	0.3	0	0	0			0	0
b. Partial thromboplastin time	2.4	1.1	4.3	1.8	5.0	1.8	0.3	0	1.0	0			0	0
c. Euglobulin	0.7	0.3	1.8	0.8	0	0	0	0	0	0			0	0
d. Factor V-VIII-X Assays	0.7	0.3	1.5	0.8	0	0	0.3	0	0	0			0	0
10. Reading Lupus Erythematosus Slides	3.1	3.6	3.8	1.8	0	7.0	1.7	1.3	0	5.0			4.0	5.0
11a Staining and reading														
a. Peroxidase stain	1.1	0.5	2.0	0.8	0	0.6	1.0	0.7	0	0			0	0
b. Alkaline phosphatase stain	1.1	0.7	2.0	1.4	0	0.6	1.0	0	0	0			0	0
12. Reading bone marrows slides	1.8	0.5	2.8	0	1.0	2.2	2.0	0	0	0			0	1.0
13. Research	0.1	2.0	0.3	0.1	0	7.8	0	1.7	0	0			0	0.5
14. Teaching	6.8	2.7	11.5	1.6	0	5.4	6.7	3.3	2.0	2.3			0	0.5
15. Supervisory	2.2	1.1	2.0	1.2	0	1.6	4.0	0.7	2.0	1.0			0	0
16. Other	8.0	9.6	9.8	8.0	0	5.2	4.7	2.3	21.0	12.5			6.0	15.5
Total Number of Technologists	10		4		1		3		1		0		1	
Total Number of Technicians		23		9		5		3		4		0		2

Table No. 33 Percentage of Hematology Technologists and Technicians Performing Various Functions, By Types of Hospitals

FUNCTIONS	All Hospitals		Types of Hospitals											
			General Short Term Non Profit		General Short Term - City		General Short Term Federal		Special Short Term Non Profit		Special Long Term Non Profit		Special Long Term - State	
	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech
1. Drawing capillary and venous bloods.	100.0	91.3	100.0	100.0	100.0	100.0	100.0	66.7	100.0	75.0	NONE	NONE	100.0	100.0
2. Staining Blood smears	100.0	91.3	100.0	88.9	100.0	100.0	100.0	66.7	100.0	100.0			100.0	100.0
3. Collecting blood specimens for laboratory	90.0	86.9	100.0	100.0	100.0	80.0	100.0	66.7	0	75.0			100.0	100.0
4. Performing routine tests, Hct, Hgb, WBC, etc.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0			100.0	100.0
5a Performing routine coagulation tests														
a. Bleeding time	90.0	69.6	75.0	77.8	100.0	80.0	100.0	66.7	100.0	25.0			100.0	100.0
b. Clotting time	90.0	69.6	75.0	88.9	100.0	80.0	100.0	33.3	100.0	25.0			100.0	50.0
c. Prothrombin time	90.0	56.5	100.0	88.9	100.0	60.0	100.0	33.3	100.0	25.0			0	50.0
6. Reading differentials	100.0	86.9	100.0	77.8	100.0	100.0	100.0	100.0	100.0	75.0			100.0	100.0
7. Performing RBC test	90.0	82.6	100.0	88.9	100.0	80.0	66.7	66.7	100.0	75.0			100.0	100.0
8. Performing Petic Count	100.0	91.3	100.0	100.0	100.0	80.0	100.0	100.0	100.0	75.0			100.0	100.0
9a Performing advanced coagulation tests														
a. Serial Thrombin time	40.0	34.8	75.0	55.6	0	20.0	33.3	0	0	0			0	0
b. Partial thromboplastin time	70.0	30.4	100.0	55.6	100.0	40.0	33.3	0	100.0	0			0	0
c. Euglobulin	20.0	13.0	50.0	33.3	0	0	0	0	0	0			0	0
d. Factor V-VII-X Assays	30.0	8.7	50.0	22.2	0	0	33.3	0	0	0			0	0
10. Reading Lupus Erythematosus Slides	70.0	56.5	100.0	33.3	0	80.0	66.7	66.7	0	50.0			100.0	100.0
11. Staining and reading														
a. Peroxidase stain	40.0	8.7	75.0	11.1	0	20.0	33.3	0	0	0			0	0
b. Alkaline phosphatase stain	40.0	17.4	75.0	33.3	0	20.0	33.3	0	0	0			0	0
12. Reading one marrows slides	40.0	8.7	50.0	0	100.0	40.0	33.3	0	0	0			0	50.0
13. Research	10.0	17.4	25.0	0	0	40.0	0	66.7	0	0			0	50.0
14. Teaching	70.0	39.1	100.0	44.4	0	60.0	66.7	33.3	100.0	50.0			0	50.0
15. Supervisory	30.0	30.4	25.0	22.2	0	60.0	33.3	33.3	100.0	25.0			0	0
16. Other	80.0	60.9	100.0	66.7	0	60.0	66.7	66.7	100.0	25.0			100.0	100.0
Total Number of Technologists	10		4		1		3		1		0		1	
Total Number of Technicians		23		9		5		3		4		0		2

Figure No. 9 HEMATOLOGY TECHNOLOGISTS



1/ Other:

9a. Performing advanced coagulation tests:

9b. Serial Thrombin time

9c. Euglobulin

9d. Factor V-VII-X Assays

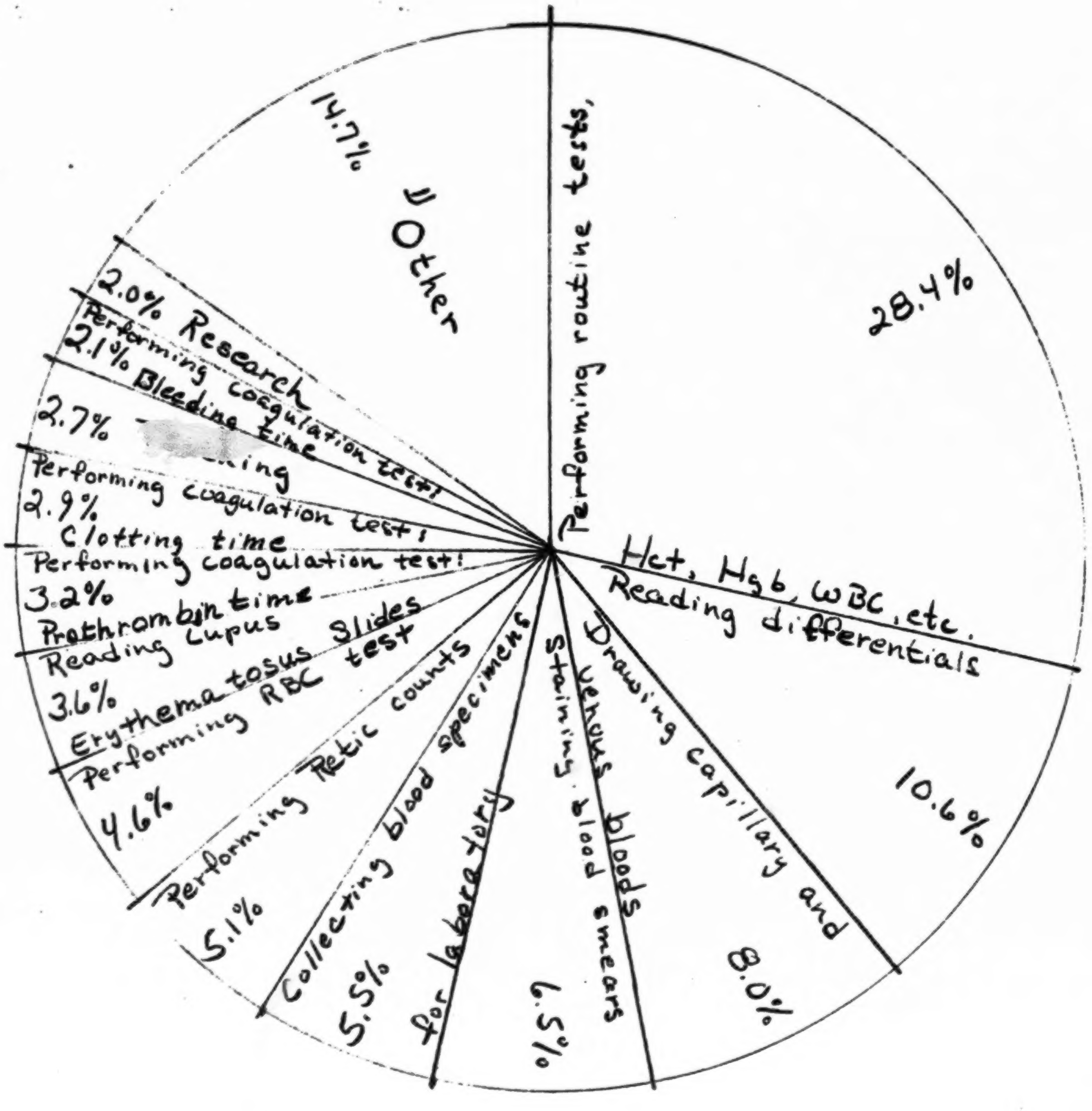
11a. Staining and Reading: Peroxidase stain

11b. Alkaline phosphatase stain

12. Reading bone marrow slides

13. Research

Figure No. 10 HEMATOLOGY TECHNICIANS



1/ Other:

9a. (b. c. d.) Performing advanced coagulation tests: Serial Thrombin time; Partial thromboplastin time; Euglobulin; Factor V-VII-X Assays

11a. (b.) Staining and reading: Peroxidase stain; Alkaline phosphatase stain

12. PReading bone marrow slides

15. Supervisory

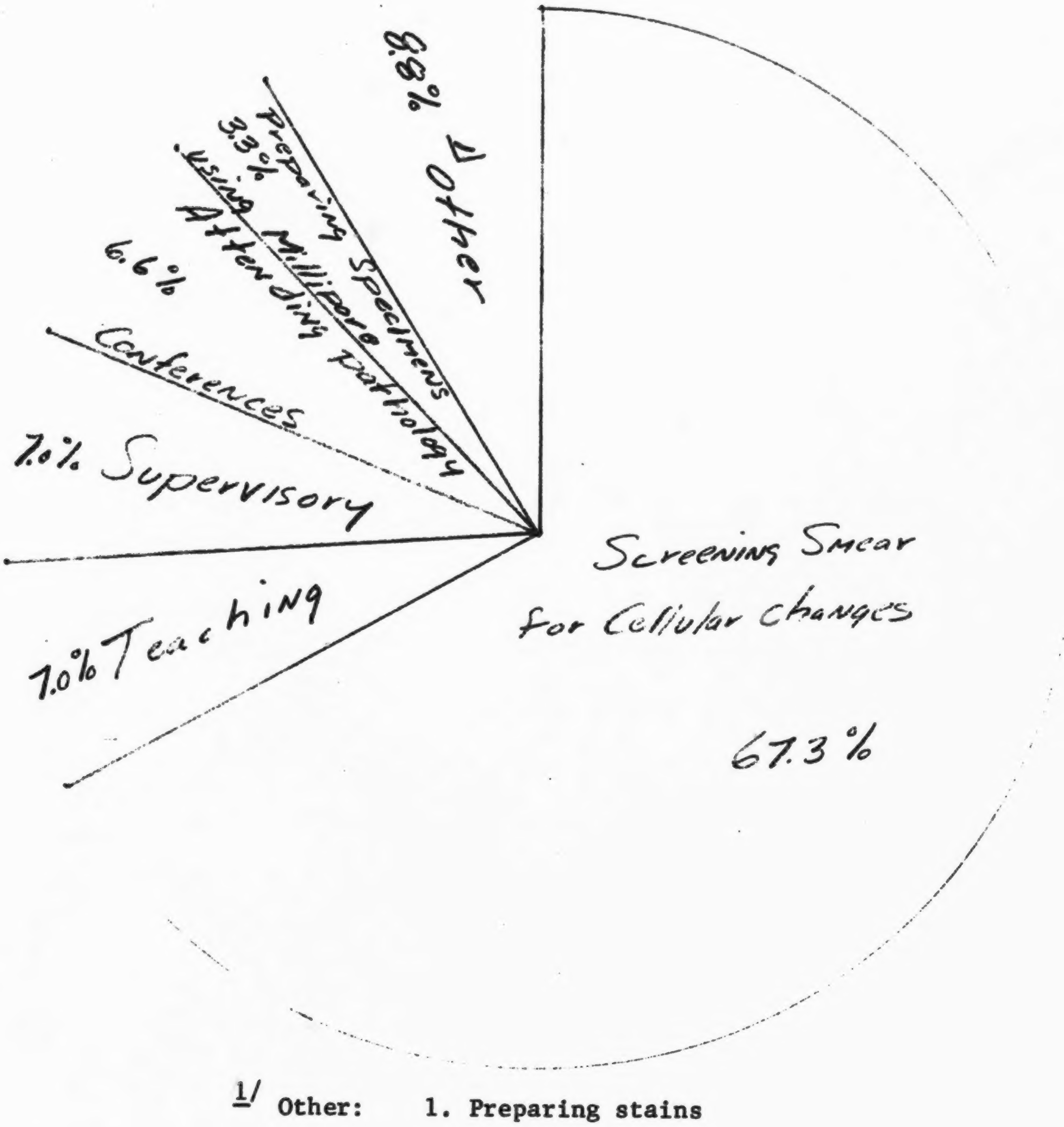
TABLE NO. 34 Percentage of Total Working Time of Cytotechnologists and Technicians Spent on Various Functions, by Types of Hospitals

FUNCTIONS	All Hospitals		Types of Hospitals											
			General Short Term Non Profit		General Short Term - City		General Short Term Federal		Special Short Term Non Profit		Special Long Term Non Profit		Special Long Term - State	
	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol
1. Preparing Stains	13.7	.3	7.3	.5	5.0	0	4.0	NONE	NONE	NONE	NONE	NONE	60.0	NONE
2. Staining	9.6	1.3	7.6	2.0	3.0	0	8.0						30.0	
3. Mounting	7.8	.3	14.6	.5	1.5	0	4.0						4.0	
4. Preparing Specimens using millipore	2.4	3.3	1.3	5.0	2.5	0	8.0						0	
5. Obtaining Cervical Specimens	1.7	0	0	0	0	0	8.0						4.0	
6. Obtaining Gastric Specimens	1.0	0	0	0	0.5	0	2.0						0	
7. Screening smear for cellular changes	55.4	67.3	60.0	91.0	74.0	20.0	61.0						0	
8. Attending Pathology Conferences	1.1	6.6	0	0	3.5	20.0	1.0						0	
9. Research	2.1	0	0.7	0	6.0	0	1.0						0	
10. Teaching	2.3	7.0	5.0	.5	0	20.0	1.0						0	
11. Supervisory	2.3	7.0	3.3	.5	2.5	20.0	1.0						0	
12. Other	0.7	7.0	0	.5	2.5	20.0	0						0	
TOTAL NUMBER OF PERSONS	7	3	3	2	2	1	1	0	0	0	0	0	1	

TABLE NO. 35 Percentage of Cytotechnologists and Technicians Performing Various Functions, by Types of Hospitals

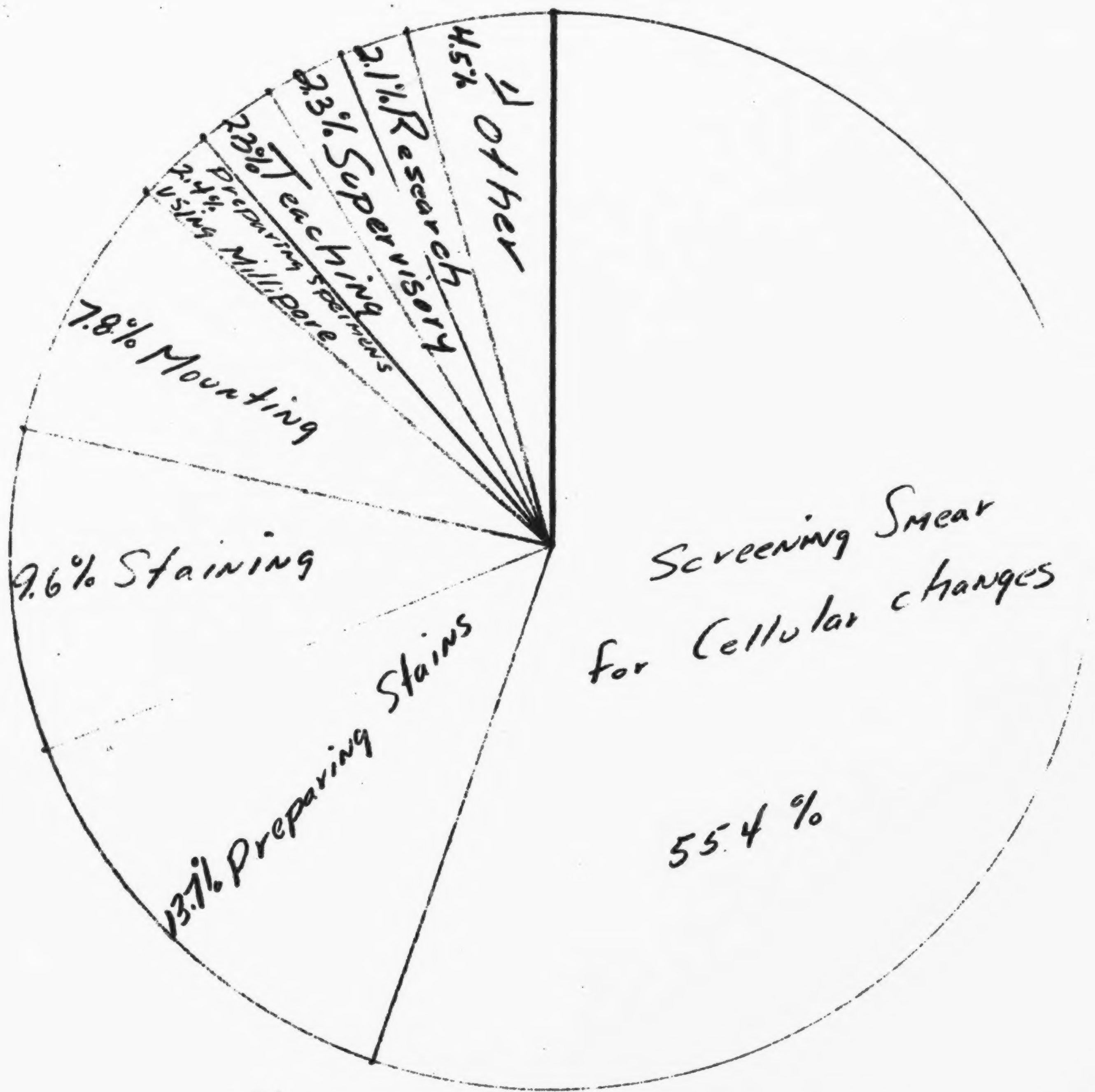
FUNCTIONS	All Hospitals		Types of Hospitals											
			General Short Term Non Profit		General Short Term - City		General Short Term Federal		Special Short Term Non Profit		Special Long Term Non Profit		Special Long Term - State	
	Tech	Techno	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol
1. Preparing Stains	57.1	33.3	33.3	50.0	50.0	0	100.0	NONE	NONE	NONE	NONE	NONE	100.0	NONE
2. Staining	71.4	66.7	66.7	100.0	50.0	0	100.0						100.0	
3. Mounting	57.1	33.3	33.3	50.0	50.0	0	100.0						100.0	
4. Preparing specimens using millipore	42.9	33.3	33.3	50.0'	50.0	0	100.0						0	
5. Obtaining cervical specimens	28.6	0	0	0	0	0	100.0						100.0	
6. Obtaining gastric specimens	28.6	0	0	0	50.0	0	100.0						0	
7. Screening smear for cellular changes	71.4	100.0	66.7	100.0	100.0	100.0	100.0						0	
8. Attending pathology conferences	42.9	33.3	0	0	100.0	100.0	100.0						0	
9. Research	57.1	0	33.3	0	100.0	0	100.0						0	
10. Teaching	28.6	66.7	33.3	50.0	0	100.0	100.0						0	
11. Supervisory	57.1	66.7	66.7	50.0	50.0	100.0	100.0						0	
12. Other	14.3	66.7	0	50.0	50.0	100.0	100.0						0	
TOTAL NUMBER OF PERSONS	7	3	3	2	2	1	1	0	0	0	0	0	1	

Figure No. 11 CYTOTECHNOLOGISTS



1/ Other:
1. Preparing stains
2. Staining
3. Mounting
* Other

Figure No.12 CYTOTECHNICIANS



1/ Other:
- 5. Obtaining cervical specimens
- 6. Obtaining gastric specimens
- 8. Attending pathology Conferences
- 12. Other

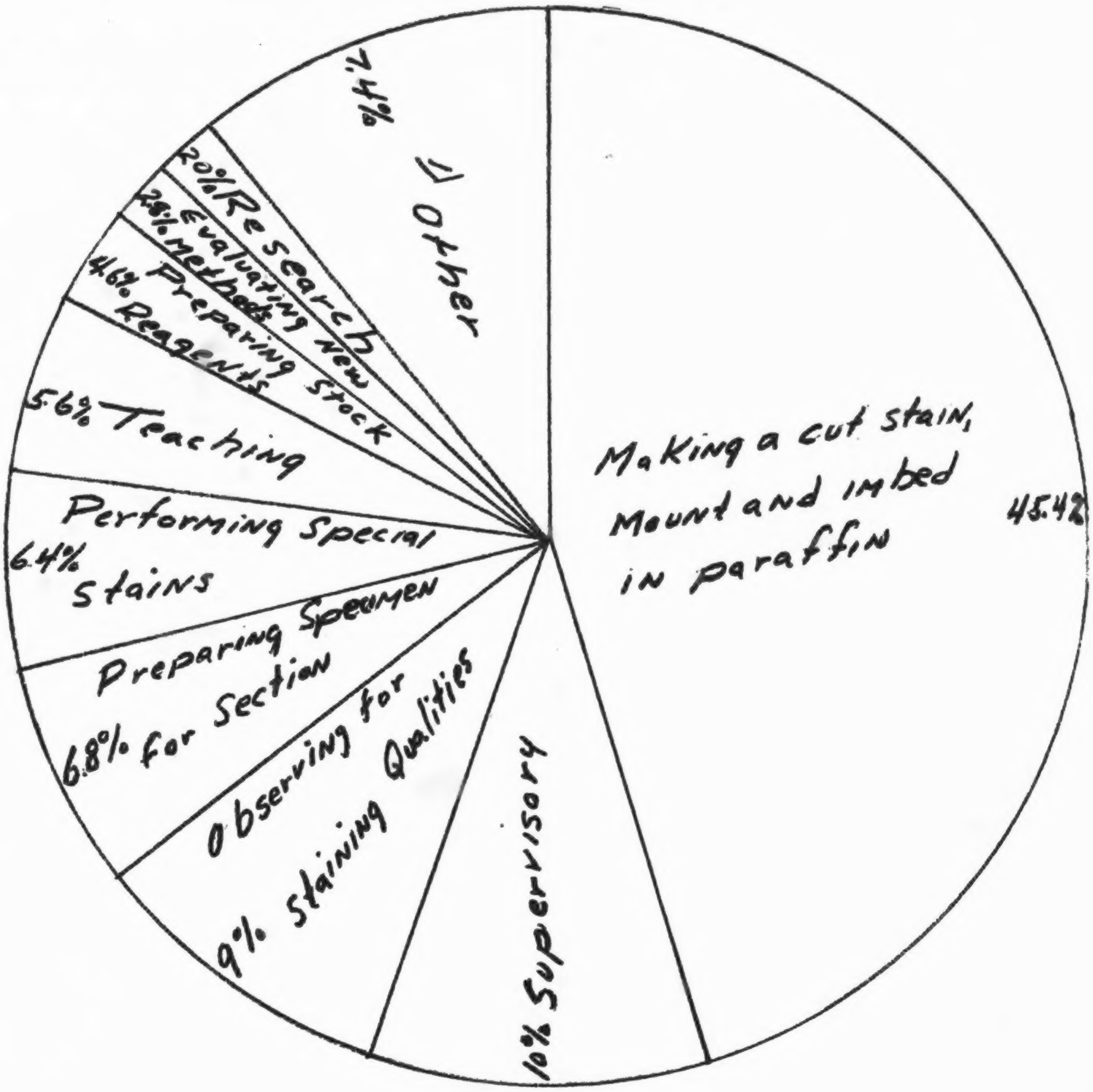
Table No. 36 Percentage of Total Working Time of Histotechnologists and Technicians Spent on Various Functions by Types of Hospitals

FUNCTIONS	All Hospitals		Types of Hospitals											
			General Short Term Non Profit		General Short Term - City		General Short Term Federal		Special Short Term Non Profit		Special Long Term Non Profit		Special Long Term - State	
	Tech-nol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech
1. Preparing specimen for section	6.8	9.0	8.2	13.3	1.0	13.3	NONE	5.0	NONE	5.5	NONE	NONE	NONE	1.0
2. Observing for staining qualities	9.0	13.0	8.7	9.6	10.0	16.7		19.0		7.0				6.0
3. Making a cut, stain, mount and imbed in paraffin	45.4	43.0	55.0	58.6	2.0	36.3		28.7		47.5				50.0
4. Preparing frozen sections	0.4	1.4	0.2	0.3	1.0	1.3		1.0		5.0				0
5. Performing special stains	6.4	10.2	3.0	6.0	20.0	14.0		14.0		5.5				10.0
6. Decalcifying bone specimens	1.2	2.7	1.2	1.0	1.0	1.7		3.0		7.0				1.0
7. Preparing celloidin embeddings	0	0.1	0	0	0	0.3		0		0				0
8. Preparing stock reagents (staining solutions)	4.6	6.9	3.2	5.0	10.0	9.7		5.0		7.0				10.0
9. Assisting pathologist at autopsy	0	0.2	0	0	0	0.3		0.7		0				0
10. Evaluating new methods	2.8	1.8	2.2	1.0	5.0	1.7		1.0		5.0				1.0
11. Research	2.0	1.2	0	1.3	10.0	0		2.7		0				2.0
12. Teaching	5.6	1.5	2.7	0	20.0	1.3		1.3		5.0				0
13. Supervisory	10.0	3.5	7.5	2.6	20.0	0.3		11.3		0				0
14. Other	5.2	4.5	6.5	1.6	0	5.0		8.0		5.0				0
Total Number of Persons	5	12	4	3	1	3	0	3	0	2	0	0	0	1

Table No. 37 Percentage of Histotechnologists and Technicians Performing Various Functions by Types of Hospitals

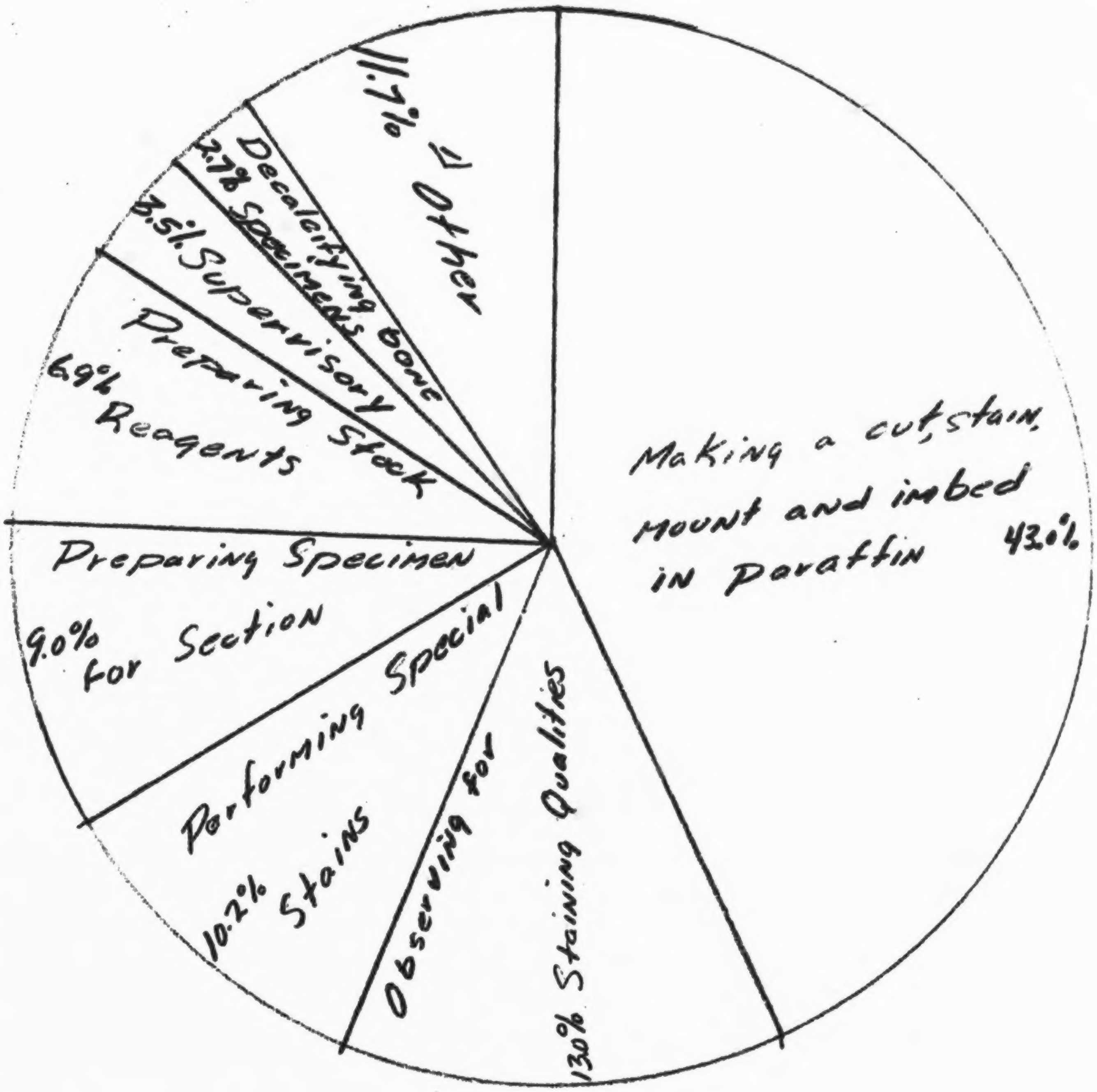
FUNCTIONS	All Hospitals		Types of Hospitals											
			General Short Term Non Profit		General Short Term - City		General Short Term Federal		Special Short Term Non Profit		Special Long Term Non Profit		Special Long Term - State	
	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech
1. Preparing specimen for section	100.0	83.3	100.0	66.7	100.0	100.0	NONE	66.7	NONE	100.0	NONE	NONE	NONE	100.0
2. Observing for staining qualities	100.0	100.0	100.0	100.0	100.0	100.0		100.0		100.0				100.0
3. Making a cut, stain, mount and imbed in paraffin	100.0	100.0	100.0	100.0	100.0	100.0		100.0		100.0				100.0
4. Preparing frozen sections	40.0	58.3	25.0	33.3	100.0	100.0		66.7		50.0				0
5. Performing special stains	80.0	100.0	75.0	100.0	100.0	100.0		100.0		100.0				100.0
6. Decalcifying bone specimens	80.0	91.7	75.0	66.7	100.0	100.0		100.0		100.0				100.0
7. Preparing celloidin embeddings	0	8.3	0	0	0	33.3		0		0				0
8. Preparing stock reagents (staining solutions)	100.0	100.0	100.0	100.0	100.0	100.0		100.0		100.0				100.0
9. Assisting pathologist at autopsy	0	16.7	0	0	0	33.3		33.3		0				0
10. Evaluating new methods	100.0	75.0	100.0	66.7	100.0	100.0		66.7		50.0				100.0
11. Research	40.0	33.3	25.0	33.3	100.0	0		66.7		0				100.0
12. Teaching	80.0	33.3	75.0	0	100.0	66.7		33.3		50.0				0
13. Supervisory	80.0	41.7	75.0	33.3	100.0	33.3		33.3		0				0
14. Other	40.0	0	50.0	33.3	0	66.7		66.7		50.0				0
Total Number of Persons	5	12	4	3	1	3	0	3	0	2	0	0	0	1

Figure No. 13 HISTOTECHNOLOGISTS



1/ Other:
4. Preparing frozen specimens
6. Decalcifying bone specimens
14. Other

Figure No. 14 HISTOTECHNICIANS



1/ Other:
4. Preparing frozen specimens
7. Preparing cellodin embeddings
9. Assist in Pathologists at Autopsy
10. Evaluating new methods
11. Research
12. Teaching
14. Other

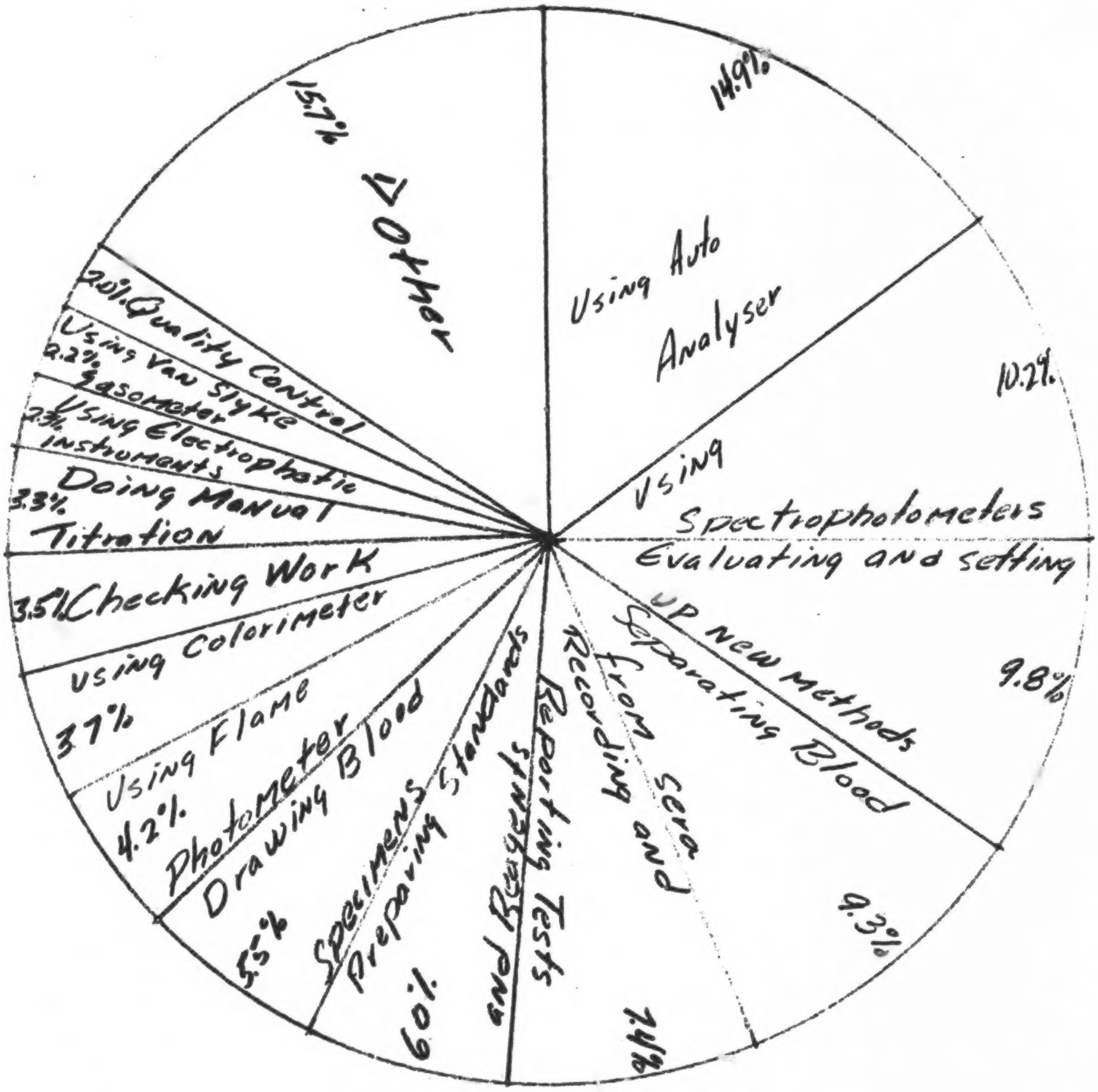
Table No. 38 Percentage of Total Working Time of Biochemistry Technologists And Technicians Spent On Various Functions by Types of Hospitals

FUNCTIONS	All Hospitals		Types of Hospitals											
			General Short Term Non Profit		General Short Term - City		General Short Term Federal		Special Short Term Non Profit		Special Long Term Non Profit		Special Long Term - State	
	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech
1. Drawing blood specimens	5.5	8.6	5.2	6.6	9.0	8.0	7.7	5.7	1.0	42.0	NONE	12.0	NONE	8.3
2. Separating blood from sera	9.3	7.8	5.8	5.9	36.0	4.3	8.7	10.5	5.5	2.0		6.0		13.3
3. Recording and reporting tests	7.4	9.8	5.8	11.3	13.0	7.3	9.0	6.2	6.0	13.0		12.0		14.0
4. Using auto analyzer	14.9	15.5	19.2	18.0	13.0	6.7	18.3	26.2	0	0		0		7.0
5. Using Flame photometer	4.2	7.6	5.0	7.3	1.0	9.7	6.3	4.7	0.5	2.0		6.0		15.0
6. Using Van Slyke gasometer	2.2	3.5	4.4	5.0	0	8.3	0	1.8	1.0	0		0		13.0
7. Using colorimeters	3.7	9.9	5.6	14.0	3.0	5.7	2.0	7.3	2.0	17.0		12.0		5.3
8. Doing automatic titration	1.2	3.2	1.2	2.1	3.0	5.3	1.3	3.7	0	0		0		5.3
9. Doing manual titration	3.3	4.5	3.6	4.8	3.0	8.0	1.0	5.2	6.0	2.0		4.0		0.3
10. Using spectrophotometers (ex. Beckman B. and D.U.)	10.2	4.1	10.2	2.9	4.0	3.7	12.0	5.0	11.0	4.0		0		7.0
11. Using elecrophoretic scanner instruments	2.3	0.5	0.2	0.3	0	0.3	8.0	1.0	0	0		0		0.3
12. Preparing standdrds and reagents	6.0	5.0	4.4	4.3	1.0	4.0	7.7	6.2	10.0	7.0		6.0		4.6
13. Using Fluorimeter	0.4	0.5	0.2	1.0	0	0	1.0	1.5	0	0		0		0
14. Using meters	1.5	1.0	1.4	1.5	0	0.7	0.3	0.5	4.5	0		4.0		0.3
15. Using P. H. Osmometers	1.4	0.5	2.0	0.1	0	1.0	0.3	1.2	2.0	0		0		0
16. Checking work to be sure calculations are correct	3.5	4.7	4.4	2.8	1.0	5.7	2.3	4.8	4.0	3.0		12.0		6.7
17. Troubleshoot auto analyzer	1.0	2.3	1.6	2.9	0	0.7	1.0	3.3	0	0		0		2.0
18. Using atomic absorption spectrophotometer	0.1	0.1	0	0	0	0	0.3	0.7	0	0		0		0
19. Calculating, evaluating equality control	2.0	2.1	0.2	2.3	1.0	0.7	1.3	1.3	7.5	0		0		5.7
20. Evaluating and setting up new methods	9.8	1.7	1.4	2.3	0	4.7	11.8	0.7	33.5	0		0		0.3
21. Calibrating instruments	1.0	1.3	0.8	1.5	0	1.0	0	0.8	3.5	7.0		0		0.3
22. Doing P.B.I. analyses	0.6	0.1	1.2	0.3	0	0	0	0	0.5	0		0		0
23. Research	0.7	0.1	1.2	0.3	0	0	0.7	0	0	0		0		0
24. Teaching	1.0	1.5	1.6	1.4	1.0	2.7	0.7	0.8	0	0		0		2.7
25. Supervisory	1.2	1.4	2.2	0.6	0	6.4	0	1.0	1.5	0		0		0
26. Other	6.0	3.4	10.6	2.4	13.0	4.7	0	2.8	0	0		25.0		0
Total Number of Persons	11	22	5	8	1	3	3	6	2	1	0	1	0	3

Table No. 39 Percentage of Biochemistry Technologists and Technicians Performing Various Functions by Types of Hospitals

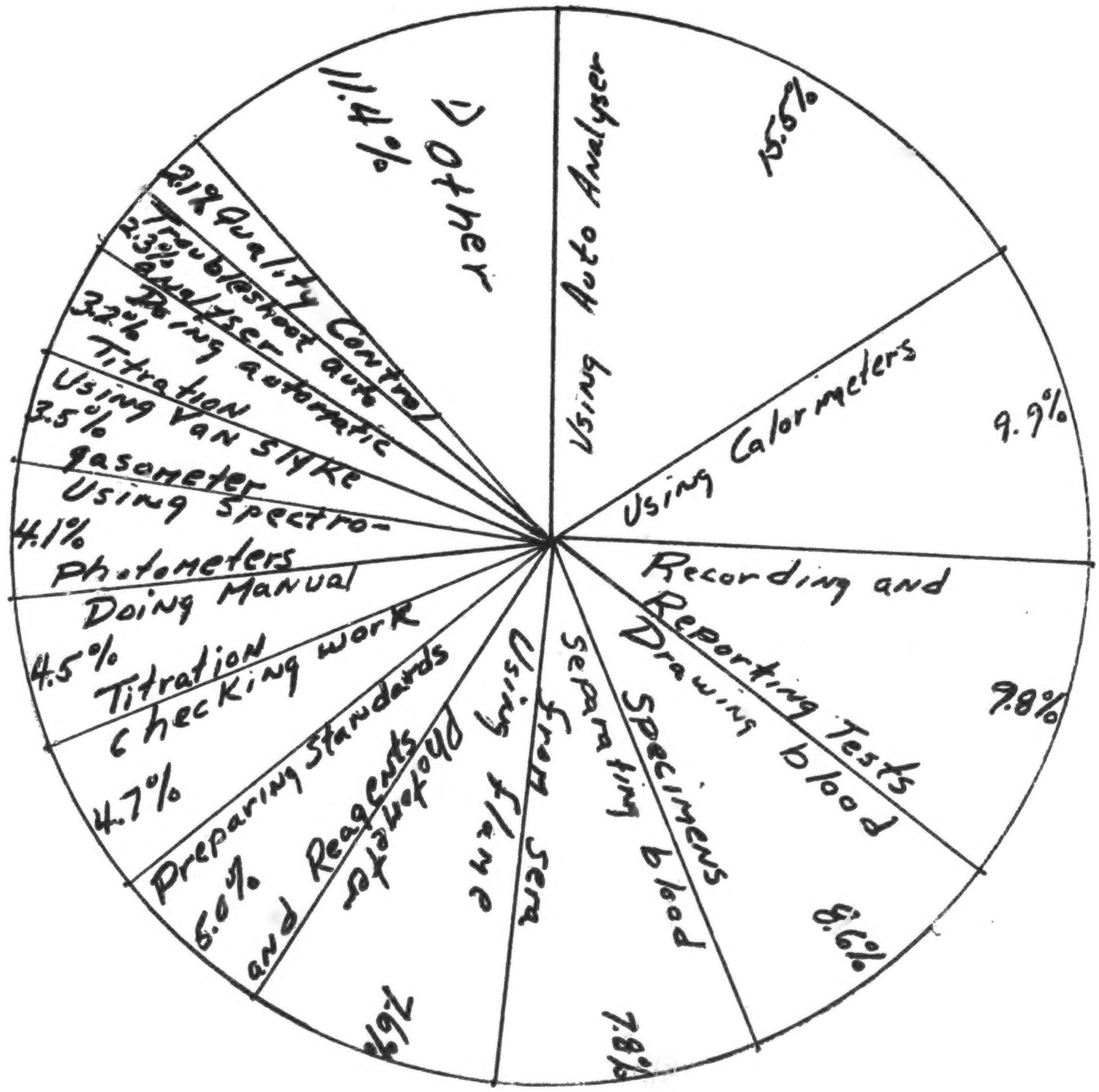
FUNCTIONS	All Hospitals		Types of Hospitals											
			General Short Term Non Profit		General Short Term - City		General Short Term Federal		Special Short Term Non Profit		Special Long Term Non Profit		Special Long Term - State	
	Tech-nol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech
1. Drawing blood specimens	81.8	95.4	100.0	100.0	100.0	66.7	66.7	100.0	50.0	100.0	NONE	100.0	NONE	100.0
2. Separating blood from sera	100.0	90.9	100.0	100.0	100.0	66.7	100.0	83.3	100.0	100.0		100.0		100.0
3. Recording and reporting tests	100.0	90.9	100.0	75.0	100.0	100.0	100.0	100.0	100.0	100.0		100.0		100.0
4. Using auto analyzer	72.7	81.8	100.0	87.5	100.0	100.0	66.7	100.0	0	0		0		66.7
5. Using Flame photometer	81.8	100.0	100.0	100.0	100.0	100.0	66.7	100.0	50.0	100.0		100.0		100.0
6. Using Van Slyke gasometer	45.4	81.8	80.0	75.0	0	100.0	0	50.0	50.0	0		0		100.0
7. Using colorimeters	90.9	95.4	100.0	87.5	100.0	100.0	100.0	100.0	50.0	100.0		100.0		100.0
8. Doing automatic titration	45.4	68.2	40.0	75.0	100.0	66.7	66.7	83.3	0	0		0		66.7
9. Doing manual titration	90.9	77.3	100.0	87.5	100.0	66.7	66.7	83.3	100.0	100.0		100.0		33.3
10. Using spectrophotometers (ex. Beckman B. and D.U.)	81.8	77.3	60.0	75.0	100.0	66.7	100.0	83.3	100.0	100.0		0		100.0
11. Using elecrophoretic scanner instruments	36.4	22.7	20.0	25.0	0	33.3	100.0	16.7	0	0		0		33.3
12. Preparing standards and reagents	90.9	86.4	100.0	87.5	100.0	66.7	100.0	83.3	50.0	100.0		100.0		100.0
13. Using Fluorimeter	27.3	13.6	20.0	25.0	0	0	66.7	16.7	0	0		0		0
14. Using meters	45.4	54.5	40.0	75.0	0	33.3	33.3	50.0	100,0	0		100.0		33.3
15. Using P. H. Osmometers	54.5	36.4	80.0	25.0	0	66.7	33.3	66.7	50.0	0		0		0
16. Checking work to be sure calculations are correct	81.8	86.4	80.0	75.0	100.0	100.0	66.7	100.0	100.0	100.0		100.0		66.7
17. Troubleshoot auto analyzer	54.5	63.6	80.0	75.0	0	66.7	66.7	66.7	0	0		0		66.7
18. Using atomic absorption spectrophotometer	9.1	4.5	0	0	0	0	33.3	16.7	0	0		0		0
19. Calculating, evaluating equality control	54.5	50.0	20.0	62.5	100.0	66.7	100.0	33.3	50.0	0		0		66.7
20. Evaluating and setting up new methods	54.5	50.0	40.0	87.5	0	33.3	66.7	33.3	100.0	0		0		33.3
21. Calibrating instruments	36.4	45.4	60.0	37.5	0	66.7	0	50.0	50.0	100.0		0		33.3
22. Doing P. B.I. analyses	27.3	4.5	40.0	12.5	0	0	0	0	50.0	0		0		0
23. Research	18.2	9.0	20.0	25.0	0	0	33.3	0	0	0		0		0
24. Teaching	45.4	50.0	60.0	62.5	100.0	100.0	33.3	33.3	0	0		0		33.3
25. Supervisory	18.2	31.8	20.0	25.0	0	66.7	0	50.0	50.0	0		0		0
26. Other	36.4	27.3	60.0	25.0	100.0	33.3	0	66.7	0	0		100.0		0
Total Number of Persons	11	22	5	8	1	3	3	6	2	1	0	1	0	3

Figure No. 15 BIOCHEMISTRY TECHNOLOGISTS



1/ Other:
8. Doing automatic titration
13. Using fluorimeter
14. Using meters
15. Using P. H. osmometers
17. Troubleshoot auto analyser
18. Using atomic absorption spectrophotometer
21. Calibrating instruments
22. Doing D.B.I. analyses
23. Research
24. Teaching
25. Supervisory
26. Other

Figure No. 16 BIOCHEMISTRY TECHNICIANS



1/ Other:

11. Using electrophoretic scanner instruments
13. Using fluorimeter
14. Using meters
15. Using P H osmometers
19. Using atomic aborption spectro photometer
20. Evaluation and setting VP new methods
21. Calibrating instruments
23. Research
24. Teaching
25. Supervisory
26. Other

TABLE NO. 40 Percentage of Total Working Time of Blood Bank Technologists Spent on Various Functions, By Type of Hospital

FUNCTIONS	All Hospitals		Types of Hospitals											
			General Short Term Non Profit		General Short Term - City		General Short Term Federal		Special Short Term Non Profit		Special Long Term Non Profit		Special Long Term - State	
	Tech	Techn	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Techno
1. Drawing patient's blood for grouping typing & cross matching	11.5	7.0	18.3	9.6	14.7	15.6	3.0	3.6	17.0	0	NONE	NONE	5.3	1.0
2. Draw blood from donors	5.2	6.2	7.2	6.2	9.5	3.1	1.9	13.2	2.0	0			2.1	3.1
3. Screening, donors for their blood hemoglobin concentration	2.2	2.9	3.9	3.7	1.5	5.2	1.6	2.1	2.0	0			0	2.1
4. Grouping, and Typing of Donor	7.6	5.3	11.8	5.0	7.6	10.4	1.3	2.7	2.0	4.8			21.3	15.5
5. Doing Syphilis Serology	3.9	4.4	3.6	3.2	4.4	10.4	1.3	.9	1.0	10.9			18.1	0
6. Performing both a direct and indirect groupings	6.7	12.1	6.9	10.3	7.3	10.4	3.8	8.2	10.0	9.6			16.0	54.6
7. Crossmatching donors and recipient blood as to ascertain compatitiblity	26.3	13.7	22.4	19.0	28.1	10.4	43.8	12.7	17.0	19.6			16.0	2.1
8. Do Comb's Test	8.0	6.8	7.7	8.3	8.6	10.4	6.7	8.2	17.0	4.8			0	0
9. Identify Anitbody	5.3	4.7	1.5	3.1	.7	2.1	17.8	10.0	2.0	0			0	1.0
10. Absorption technique	1.8	2.9	.8	1.5	.7	2.1	0	1.8	10.0	7.8			0	0
11. Elution Techniques	1.7	2.9	.8	1.8	2.2	2.1	0	1.8	0	7.8			0	0
12. Transfusion reaction follow up	3.2	2.0	3.9	2.1	2.2	2.1	1.6	1.8	10.0	4.3			0	0
13. Research	3.3	4.0	0	0	2.9	0	4.1	4.5	0	0			0	0
14. Teaching	2.6	7.6	1.5	12.3	1.5	0	3.6	3.6	10.0	4.3			0	0
15. Supervisory	2.2	9.6	1.5	10.0	2.2	15.6	3.6	14.1	0	7.8			0	0
16. Other	8.2	8.5	8.2	3.9	5.9	0	5.7	10.0	0	18.3			21.3	20.6
TOTAL NUMBER OF PERSONS	12	11	4	5	3	1	3	2	1	2	0	0	1	1

TABLE NO. 41 Percentage of Blood Bank Technologists and Technicians Performing Various Functions, by Types of Hospitals

FUNCTIONS	All Hospitals		Types of Hospitals											
			General Short Term Non Profit		General Short Term - City		General Short Term Federal		Special Short Term Non Profit		Special Long Term Non Profit		Special Long Term - State	
	Tecnl	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Techno	Tech
1. Drawing patients blood for grouping, typing and cross-matching	72.7	75.0	100.0	75.0	100.0	33.3	50.0	100.0	00.0	100.0	NONE	NONE	100.0	100.0
2. Drawing blood from donors	81.8	75.0	100.0	75.0	100.0	33.3	100.0	100.0	00.0	100.0			100.0	100.0
3. Screening donors for their blood hemoglobin concentration	72.7	75.0	100.0	75.0	100.0	66.7	50.0	66.7	00.0	100.0			100.0	00.0
4. Grouping and typing of donor	81.8	91.6	80.0	75.0	100.0	100.0	50.0	100.0	100.0	100.0			100.0	100.0
5. Doing syphilis serology	90.9	91.6	100.0	75.0	100.0	100.0	50.0	100.0	100.0	100.0			100.0	100.0
6. Performing both a direct and indirect grouping	90.0	100.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0			00.0	100.0
7. Crossmatching donor and recipient blood so as to ascertain compatibility	100.0	100.	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0			100.0	100.0
8. Doing Comb's Test	100.0	83.3	100.0	50.0	100.0	100.0	100.0	100.0	100.0	100.0			100.0	100.0
9. Identifying anti-bodies	72.7	41.6	80.0	50.0	100.0	33.3	100.0	33.3	50.0	100.0			00.0	00.0
10. Absorption Technique	81.8	50.0	80.0	25.0	100.0	33.3	100.0	33.3	50.0	100.0			100.0	00.0
11. Elution Technique	63.6	50.0	60.0	25.0	100.0	66.7	100.0	33.3	50.0	00.0			00.0	00.0
12. Transfusing reaction follow-up	63.6	75.0	60.0	25.0	100.0	100.0	50.0	66.7	100.0	100.0			00.0	00.0
13. Research	.09	33.3	00.0	00.0	00.0	66.7	50.0	66.7	00.0	00.0			00.0	00.0
14. Teaching	45.5	58.3	20.0	50.0	00.0	66.7	100.0	66.7	100.0	100.0			00.0	00.0
15. Supervisory	54.5	50.0	40.0	50.0	100.0	33.3	100.0	100.0	50.0	00.0			00.0	00.0
16. Other	72.7	75.0	60.0	75.0	00.0	33.3	100.0	100.0	100.0	00.0			100.0	100.0
	11	12	5	4	1	3	2	3	2	1	0	0	1	1

3 OF 4

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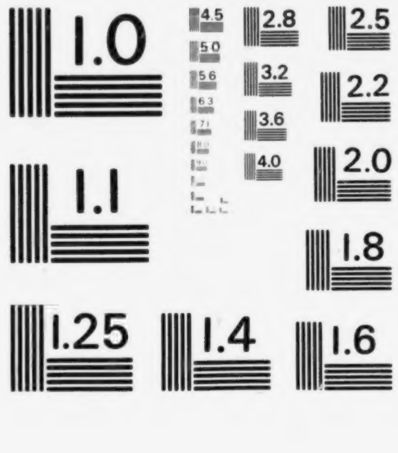
1.0
4.5
5.0
5.6
6.3
7.1
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3.2
3.6
4.0
2.5
2.2
2.0
1.1
1.8
1.25
1.4
1.6

MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

FIGURE NO. 17 BLOOD BANK TECHNOLOGIST

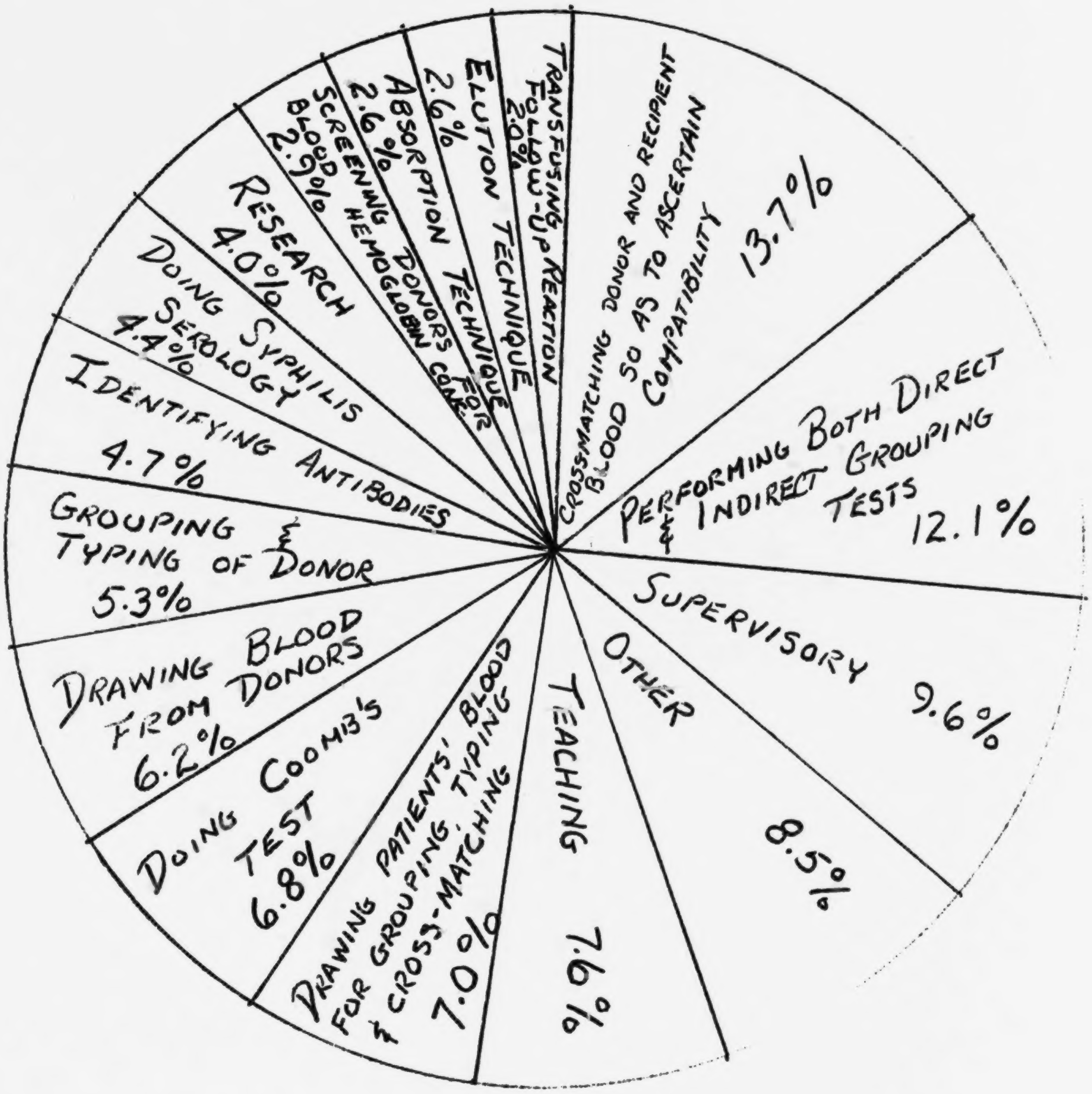

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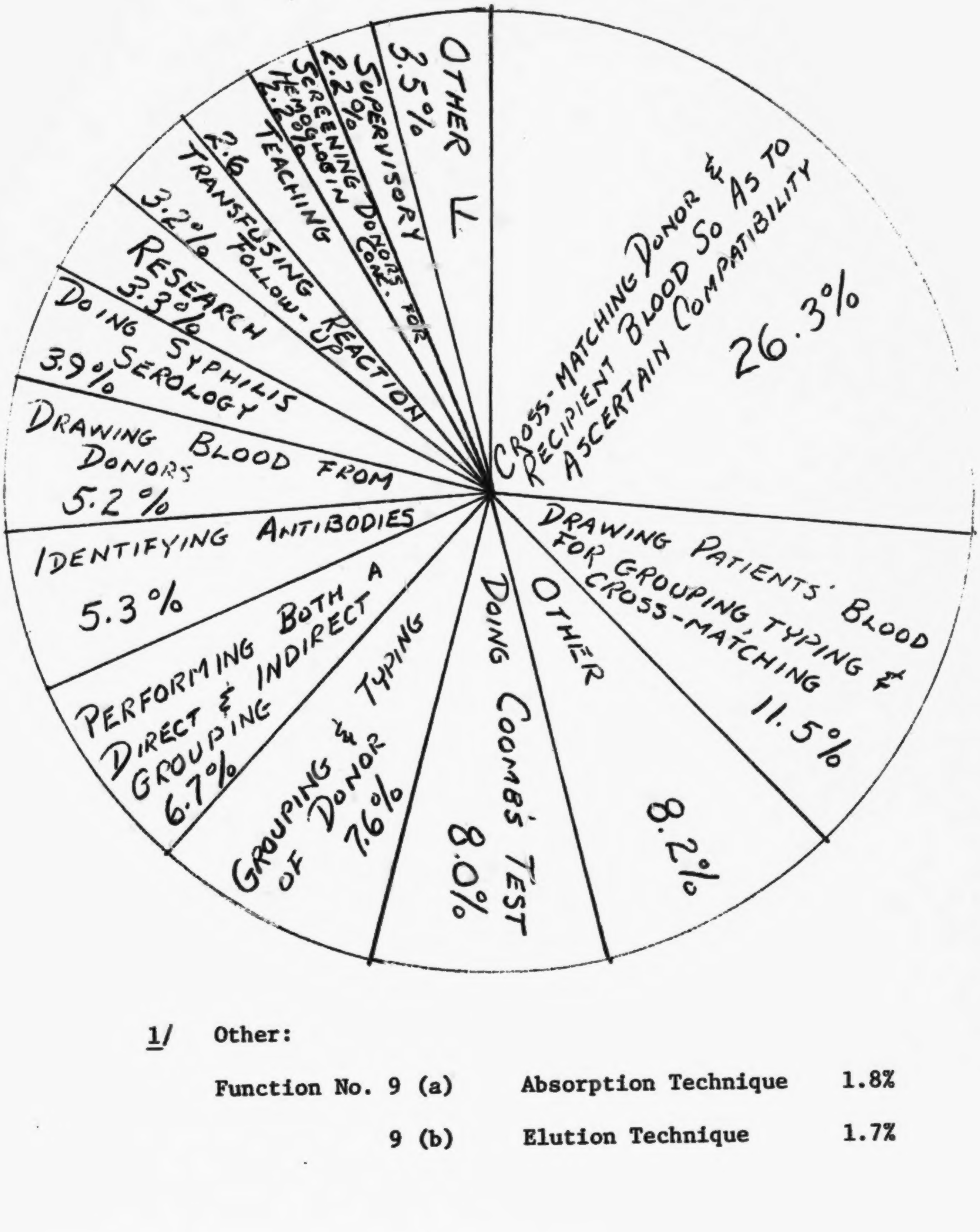
FIGURE NO. 18 BLOOD BANK TECHNICIAN



1/ Other:

Function No.	9 (a)	Absorption Technique	1.8%
	9 (b)	Elution Technique	1.7%

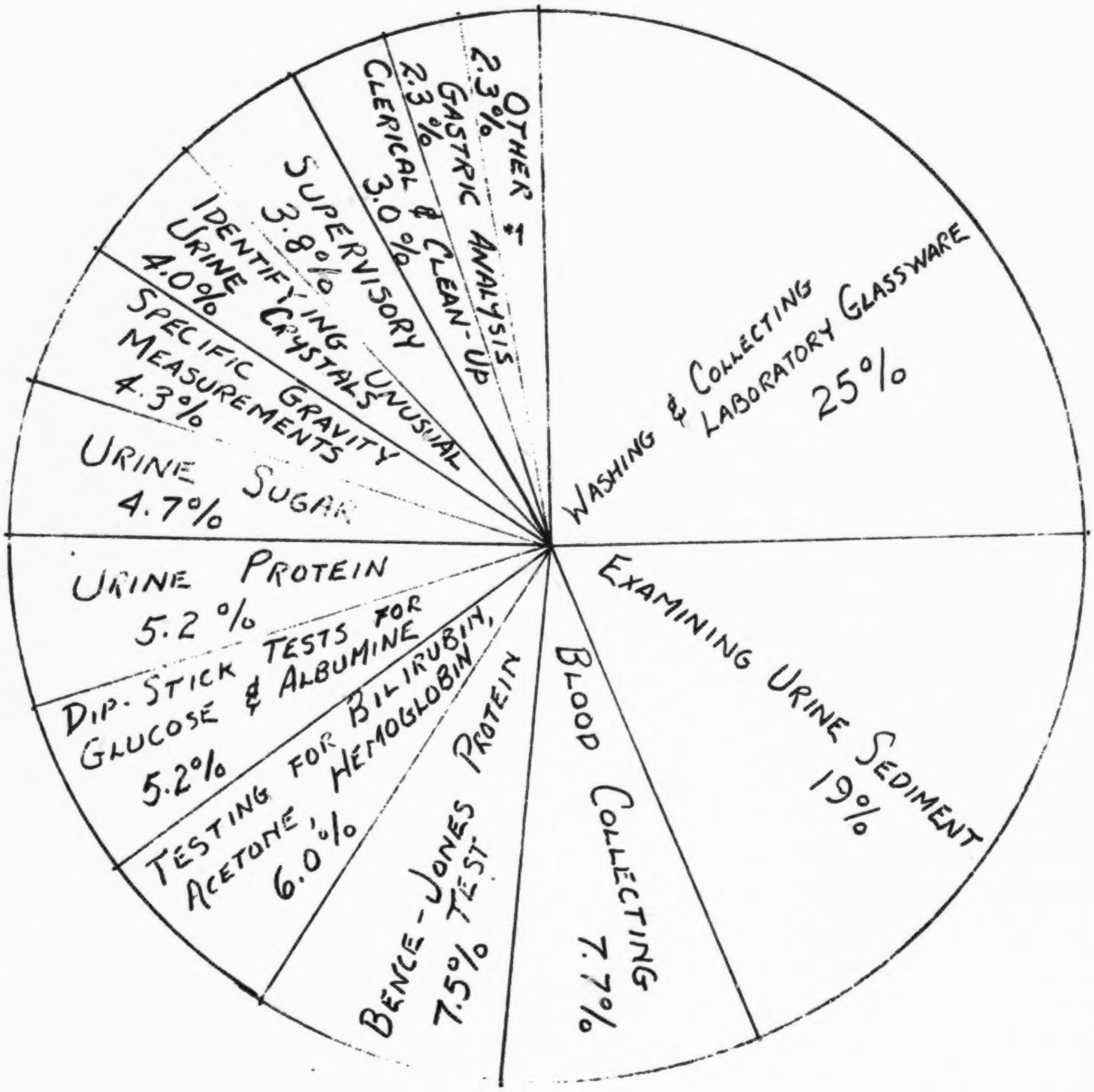
Table No. 42 Percentage of Total Working Time of Laboratory Assistants Spent On Various Functions by Types of Hospitals

FUNCTIONS	All Hospitals	Types of Hospitals					
		General Short Term Non Profit	General Short Term - City	General Short Term - Federal	Special Short Term Non Profit	Special Long Term Non Profit	Special Long Term - State
	Percent	Percent	Percent	Percent	Percent	Percent	Percent
1. Dip Stick Tests for Glucose and Albumin	5.2	2.0	NONE	15.0	NONE	NONE	NONE
2. Specific Gravity measurement	4.3	3.3		7.0			
3. Examining Urine Sediment	19.0	20.3		15.0			
4. Gastric Analysis	2.3	3.0		0			
5. Testing for bilirubin, Acetone, hemoglobin	6.0	5.7		7.0			
6. Bence Jones Protein test	7.5	9.0		3.0			
7. Identifying Unusual urine crystals	4.0	3.0		7.0			
8. Washing & collecting lab. Glassware	25.0	33.3		0			
9. Urine Sugar	4.7	6.3		0			
10. Urine Protein	5.2	7.0		0			
11. P.S.F.	0.8	1.0		0			
12. Occult blood on stods	1.5	2.0		0			
13. Clerical & Clean up	3.0	4.0		0			
14. Blood Collecting	7.7	0		31.0			
15. Supervisory	3.8	0		15.0			
Total Number of Persons	4	3		1			

Table No. 43 Percentage of Laboratory Assistants Performing Various Functions, by Types of Hospitals

FUNCTIONS	All Hospitals	Types of Hospitals					
		General Short Term Non Profit	General Short Term - City	General Short Term - Federal	Special Short Term Non Profit	Special Long Term Non Profit	Special Long Term - State
	Percent	Percent	Percent	Percent	Percent	Percent	Percent
1. Dip Stick Tests for Glucose and Albumin	50.0	33.3		100.0			
2. Specific Gravity measurement	75.0	66.7		100.0			
3. Examining Urine sediment	75.0	66.7		100.0			
4. Gastric Analysis	50.0	66.7		0			
5. Testing for bilirubin, acetone, hemoglobin	75.0	66.7		100.0			
6. Bence Hones Protein test	75.0	66.7		100.0			
7. Identifying Unusual urine crystals	75.0	66.7		100.0			
8. Washing & collecting lab. Glassware	25.0	33.3		0			
9. Urine Sugar	25.0	33.3		0			
10. Urine Protein	25.0	33.3		0			
11. P.S.F.	25.0	33.3		0			
12. Occult blood on stods	25.0	33.3		0			
13. Clerical & Clean up	25.0	33.3		0			
14. Blood Collecting	25.0	0		100.0			
15. Supervisory	25.0	0		100.0			
Total Number of Persons	4	3		1			

Figure No. 19 Laboratory Assistants



* 10 Other

11. P. S. F.

12. Occult blood on stods

Table No. 44 Percentage Distribution of Microbiology Technologists and Technicians in Various Types of Hospitals by Number of Years Employed at Present Occupation[1/]

YEARS EMPLOYED AT PRESENT OCCUPATION	All Hospitals		Types of Hospitals											
			General Short Term Non Profit		General Short Term - City		General Short Term - Federal		Special Short Term Non Profit		Special Long Term Non Profit		Special Long Term - State	
	Tech-nol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech
Less than 1 year	12.5	10.5	20.0	20.0										100.0
1 to 3 years	50.0	31.6	60.0			40.0	100.0	50.0		50.0				
4 to 6 years	12.5	26.3	20.0	60.0		20.0				50.0				
7 to 9 years		5.3						16.7						
10 to 14 years														
15 years and over	25.0	26.3		20.0		40.0		33.3			100.0		100.0	
Total Number of Personnel	8	19	5	5	0	5	1	6	0	2	1	0	1	1

[1/] May not add to 100 percent because of rounding.

Table No. 45 Percentage Distribution of Hematology Technologists and Technicians In Various Types of Hospitals by Number of Years Employed at Present Occupation[1]

YEARS EMPLOYED AT PRESENT OCCUPATION	All Hospitals		Types of Hospitals											
			General Short Term Non Profit		General Short Term - City		General Short Term - Federal		Special Short Term Non Profit		Special Long Term Non Profit		Special Long Term - State	
	Tech-nol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech
Less than 1 year	20.0	13.6		11.1			33.3	33.3	100.0	33.3				
1 to 3 years	40.0	45.4	50.0	66.6		40.0	66.7			33.3				50.0
4 to 6 years	30.0	9.1	50.0		100.0	20.0				33.3				
7 to 9 years		9.1		11.1				33.3						
10 to 14 years	10.0	4.5		11.1									100.0	
15 years and over		18.2				40.0		33.3						50.0
Total Number of Personnel	10	22	4	9	1	5	3	3	1	3			1	2

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[1] May not add to 100 percent because of rounding.

Table No. 46 Percentage Distribution of Cytotechnologists and Technicians in Various Types of Hospitals by Number of Years Employed at Present Occupation[1]

YEARS EMPLOYED AT PRESENT OCCUPATION	All Hospitals		Types of Hospitals											
			General Short Term Non Profit		General Short Term - City		General Short Term - Federal		Special Short Term Non Profit		Special Long Term Non Profit		Special Long Term - State	
	Tech-nol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech
Less than 1 year		14.2								50.0				
1 to 3 years	33.3	28.5	50.0			50.0		100.0						
4 to 6 years		14.2								50.0				
7 to 9 years		28.5		50.0		50.0								
10 to 14 years		14.2		50.0										
15 years and over	66.7		50.0		100.0									
Total Number of Personnel	3	7	2	2	1	2	0	1	0	2				

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[1] May not add to 100 percent because of rounding.

Table No. 47 Percentage Distribution of Histology Technologists and Technicians In Various Types of Hospitals by Number of Years Employed at Present Occupation[1/]

YEARS EMPLOYED AT PRESENT OCCUPATION	All Hospitals		Types of Hospitals: General Short Term Non Profit		General Short Term - City		General Short Term - Federal		Special Short Term Non Profit		Special Long Term Non Profit		Special Long Term - State	
	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech
Less than 1 year														
1 to 3 years		33.3		100.0						50.0				
4 to 6 years	20.0		25.0											
7 to 9 years		25.0				66.7								100.0
10 to 14 years		25.0				33.3		33.3		50.0				
15 years and over	80.0	16.7	75.0		100.0			66.7						
Total Number of Personnel	5	12	4	3	1	3	0	3	0	2			0	1

[1/] May not add to 100 percent because of rounding.

Table No. 48 Percentage Distribution of Biochemistry Technologists and Technicians in Various Types of Hospitals by Number of Years Employed at Present Occupation[1]

YEARS EMPLOYED AT PRESENT OCCUPATION	All Hospitals		Types of Hospitals											
			General Short Term Non Profit		General Short Term - City		General Short Term - Federal		Special Short Term Non Profit		Special Long Term Non Profit		Special Long Term - State	
	Tech-nol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech
Less than 1 year	27.3	9.1					66.7	16.7	50.0					33.3
1 to 3 years	54.5	22.7	60.0	12.5	100.0	66.7	33.3		50.0	100.0				33.3
4 to 6 years		31.8		37.5				50.0				100.0		
7 to 9 years	9.1	13.6	20.0	12.5		33.3								33.3
10 to 14 years		9.1		12.5				16.7						
15 years and over	9.1	13.6	20.0	25.0				16.7						
Total Number of Personnel	11	22	5	8	1	3	3	6	2	1	0	1	0	3

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[1] May not add to 100 percent because of rounding.

Table No. 49 Percentage Distribution of Blood Bank Technologists and Technicians In Various Types of Hospitals by Number of Years Employed at Present Occupation[1/]

YEARS EMPLOYED AT PRESENT OCCUPATION	All Hospitals		Types of Hospitals											
			General Short Term Non Profit		General Short Term - City		General Short Term - Federal		Special Short Term Non Profit		Special Long Term Non Profit		Special Long Term - State	
	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech
Less than 1 year	18.2	16.7	20.0	25.0			50.0							100.0
1 to 3 years	36.4	25.0	40.0			66.7	50.0		50.0	100.0				
4 to 6 years	18.2	25.0	20.0	50.0		33.3			50.0					
7 to 9 years	9.1	8.3	20.0	25.0										
10 to 14 years	18.2	16.7			100.0			66.7					100.0	
15 years and over		8.3						33.3						
Total Number of Personnel	11	12	5	4	1	3	2	3	2	1			1	1

[1/] May not add to 100 percent because of rounding.

Table 50 Percentage Distribution of Laboratory Assistants by Occupational Level, Background, Longevity, and Schooling for All Hospitals

ALL HOSPITALS							
Percentage Distribution of Laboratory Assistants In Various Types of Hospitals By Occupational Level Which They May Hope to Attain		Extent To Which Educational Background Prepared Laboratory Assistants and Technicians For The Functions Presently Performed		Percentage Distribution of Laboratory Assistants In Various Types of Hospitals By Number of Years Employed At Present Occupation		Percentage Distribution o Laboratory Assistants In Various Types of Hospital By Last Year Of School Completed and Degree Obtained	
Occupational Level	Percentage	Occupational Background	Percentage	Years at Present Occupation	Percentage	Last Year of School Completed	Percen
Supervisor	25%	High School	7.5	Less than 1 yr	00	Elementary	25
Junior Supervisor	25%	College	1.3	1 to 3 yrs.	75	High School 4 yrs.	50
Technician	50%	Professional Training	32.5	4 to 9 yrs.	00	College	
		On the Job Training	46.2	10 to 14 yrs.		2 yrs. or less	25
		Work Experience	12.5	14 and over	00		
Total No. of Personnel	4	Total No. of Personnel	4	Total No. of Personnel	4	Total No. of Personnel	4

Table No. 51 Percentage Distribution of Microbiology Technologists and Technicians In Various Types of Hospitals by Last Year of School Completed and Degree Obtained

LAST YEAR OF SCHOOL COMPLETED	All Hospital		Types of Hospitals											
			General Short Term Non Profit		General Short Term - City		General Short Term - Federal		Special Short Term Non Profit		Special Long Term Non Profit		Special Long Term - State	
	Technol	Tech	Technol	Tech.	Technol	Tech.	Technol	Tech	Technol	Tech.	Technol	Tech.	Technol	Tech.
Elementary:														
8 years or less														
High School:														
1 - 3 years														
4 years		50.0		50.0		80.0		16.7		100.0				
High School:														
Diploma	11.1	94.4	16.7	100.0		100.0		83.3		100.0				100.0
College:														
2 years or less	11.1	33.3	16.7	50.0		20.0		33.3						100.0
3 years		16.7						50.0						
4 years	44.4		33.3				100.0				100.0			
5 or more years	44.4		50.0										100.0	
Associate Degree		5.6						16.7						
Bachelors Degree	55.5		50.0				100.0				100.0			
Master of Arts Degree	33.3		33.3										100.0	
Other Degree														

Table No. 52 Percentage Distribution of Hematology Technologists and Technicians In Various Types of Hospitals by Last Year of School Completed and Degree Obtained

LAST YEAR OF SCHOOL COMPLETED	All Hospital		Types of Hospitals											
			General Short Term Non Profit		General Short Term - City		General Short Term - Federal		Special Short Term Non Profit		Special Long Term Non Profit		Special Long Term - State	
	Tech-nol	Tech.	Technol.	Tech.	Technol	Tech.	Technol	Tech.	Technol	Tech.	Technol.	Tech.	Technol	Tech.
Elementary: 8 years or less														
High School: 1 - 3 years														
4 years		52.4		100.0				33.3		33.3				50.0
High School: Diploma	9.1	100.0	20.0	100.0		100.0		100.0		100.0				100.0
College: 2 years or less	18.2	47.6	40.0			100.0		66.7		66.7				50.0
3 years														
4 years	72.7		60.0		100.0		100.0						100.0	
5 or more years	9.1								100.0					
Associate Degree	9.1		20.0											
Bachelors Degree	81.8		60.0		100.0		100.0		100.0				100.0	
Master of Arts Degree														
Other Degree														

Table No. 53 Percentage Distribution of Cytotechnologists and Technicians in Various Types of Hospitals by Last Year of School Completed and Degree Obtained

LAST YEAR OF SCHOOL COMPLETED	All Hospital		Types of Hospitals											
			General Short Term Non Profit		General Short Term - City		General Short Term - Federal		Special Short Term Non Profit		Special Long Term Non Profit		Special Long Term - State	
	Tech-nol	Tech.	Technol	Tech.	Technol	Tech.	Technol	Tech.	Technol	Tech.	Technol	Tech.	Technol	Tech.
Elementary:														
8 years or less														
High School:														
1 - 3 years														
4 years		28.6				50.0				50.0				
High School: Diploma	33.3	71.4		100.0	100.0	100.0				50.0				
College:														
2 years or less	33.3	57.1		100.0	100.0			100.0		50.0				
3 years		14.3				50.0								
4 years	66.7		100.0											
5 or more years														
Associate Degree		14.3						100.0						
Bachelors Degree	66.7		100.0											
Master of Arts Degree														
Other Degree														

Table No. 54 Percentage Distribution of Histology Technologist and Technicians In Various Types of Hospitals by Last Year of School Completed and Degree Obtained

LAST YEAR OF SCHOOL COMPLETED	All Hospital		Types of Hospitals											
			General Short Term Non Profit		General Short Term - City		General Short Term - Federal		Special Short Term Non Profit		Special Long Term Non Profit		Special Long Term - State	
	Tech-nol	Tech.	Technol	Tech.	Technol	Tech.	Technol	Tech.	Technol	Tech.	Technol.	Tech.	Technol	Tech
Elementary: 8 years or less														
High School: 1 - 3 years														
4 years		58.3		100.0		66.7		33.3		50.0				
High School: Diploma	20.0	83.4	25.0	100.0		100.0		33.3		100.0				100.0
College: 2 years or less	20.0	33.4	25.0			33.3		33.3		50.0				100.0
3 years														
4 years	60.0		75.0											
5 or more years	20.0	8.3			100.0			33.3						
Associate Degree		8.3						33.3						
Bachelors Degree	80.0	8.3	75.0		100.0			33.3						
Master of Arts Degree														
Other Degree														

Table No. 55 Percentage Distribution of Biochemistry Technologists and Technicians In Various Types of Hospitals by Last Years of School Completed and Degree Obtained

LAST YEAR OF SCHOOL COMPLETED	All Hospital		Types of Hospitals											
			General Short Term Non Profit		General Short Term - City		General Short Term - Federal		Special Short Term Non Profit		Special Long Term Non Profit		Special Long Term - State	
	Tech-nol	Tech	Technol	Tech.	Technol	Tech.	Technol	Tech.	Technol	Tech	Technol.	Tech.	Technol	Tech.
Elementary: 8 years or less														
High School: 1 - 3 years														
4 years		64.0		50.0		66.7		5C.0		100.0		100.0		100.0
High School: Diploma		95.5		100.0		100.0		83.3		100.0		100.0		100.0
College: 2 years or less		31.5		50.0		33.3		33.3						
3 years	9.1	4.5			100.0									
4 years	90.9		100.0				100.0	16.7	100.0					
5 or more years														
Associate Degree	9.1	4.5			100.0			16.7						
Bachelors Degree	90.9		100.0				100.0		100.0					
Master of Arts Degree														
Other Degree														

Table No. 56 Percentage Distribution of Blood Bank Technologist and Technicians In Various Types of Hospitals by Last Year of School Completed and Degree Obtained

LAST YEAR OF SCHOOL COMPLETED	All Hospital		Types of Hospitals											
			General Short Term Non Profit		General Short Term - City		General Short Term - Federal		Special Short Term Non Profit		Special Long Term Non Profit		Special Long Term - State	
	Tech-nol	Tech.	Technol	Tech.	Technol.	Tech.	Technol	Tech.	Technol.	Tech.	Technol.	Tech.	Technol	Tech.
Elementary:														
8 years or less														
High School:														
1 - 3 years														
4 years	36.4	58.3	80.0	50.0		66.7		66.7						100.0
High School: Diploma	63.6	83.3	80.0	100.0		66.7		100.0	100.0				100.0	100.0
College:														
2 years or less	18.2	24.9		50.0					100.0	100.0				
3 years	9.1	8.3						33.3					100.0	
4 years	36.4	8.3	20.0		100.0	33.3	100.0							
5 or more years														
Associate Degree		8.3								100.0				
Bachelors Degree	36.4	8.3	20.0		100.0	33.3	100.0							
Master of Arts Degree														
Other Degree														

Table No. 57 Percentage Distribution of Microbiology Technologists and Technicians In Various Types of Hospitals by Occupational Level Which They May Hope to Attain

OCCUPATIONAL LEVEL	All Hospitals		Types of Hospitals											
			General Short Term Non Profit		General Short Term - City		General Short Term - Federal		Special Short Term Non Profit		Special Long Term Non Profit		Special Long Term - State	
	Tech-nol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech
Present	2.2	66.7	16.7	75.0		60.0		66.6		50.0	100.0			100.0
Supervisor of Department	66.7	22.2	66.6	25.0		40.0	100.0	16.7					100.0	
Desire More Training.	2.2	11.1	16.7					16.7		50.0				

Table No. 58 Percentage Distribution of Hematology Technologists and Technicians In Various Types of Hospitals by Occupational Level Which They May Hope To Attain

OCCUPATIONAL LEVEL	All Hospitals		Types of Hospitals											
			General Short Term Non Profit		General Short Term - City		General Short Term - Federal		Special Short Term Non Profit		Special Long Term Non Profit		Special Long Term - State	
	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech
Present	18.2	52.4	40.0	62.5		40.0		66.7		33.3				50.0
Supervisor of Department	72.7	23.8	40.0		100.0	60.0	100.0		100.0	66.7			100.0	
Teaching	9.1		20.0											
Desire More Training	9.1	23.8	20.0	37.5				33.3						50.0

Table No. 59 Percentage Distribution of Cytotechnologists and Technicians in Various Types of Hospitals by Occupational Level Which They May Hope to Attain

OCCUPATIONAL LEVEL	All Hospitals		Types of Hospitals											
			General Short Term Non Profit		General Short Term - City		General Short Term - Federal		Special Short Term Non Profit		Special Long Term Non Profit		Special Long Term - State	
	Tech nol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech
Present	33.3	14.3	50.0	50.0										
Supervisor of Department	33.3	57.1	50.0	50.0		100.0		100.0						
Teaching	33.3		50.0											
Desire More Training	33.3	28.6			100,0					100.0				

Table No. 60 Percentage Distribution of Histology Technologists and Technicians In Various Types of Hospitals by Occupational Level Which They May Hope To Attain

OCCUPATIONAL LEVEL	All Hospitals		Types of Hospitals											
			General Short Term Non Profit		General Short Term - City		General Short Term - Federal		Special Short Term Non Profit		Special Long Term Non Profit		Special Long Term - State	
	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech
Present	60.0	66.7	50.0	66.7	100.0	33.3		66.7		100.0				100.0
Supervisor of Department	40.0	33.3	50.0	33.3		66.7		33.3						
Teaching	20.0	8.3	25.0			33.3								

Table No. 61 Percentage Distribution of Biochemistry Technologists and Technicians
In Various Types of Hospital by Occupational Level Which They May Hope
To Attain

OCCUPATIONAL LEVEL	All Hospitals		Types of Hospitals											
			General Short Term Non Profit		General Short Term - City		General Short Term - Federal		Special Short Term Non Profit		Special Long Term Non Profit		Special Long Term - State	
	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech
Present		40.9		50.0		66.7		33.3						33.3
Supervisor of Department	72.7	22.7	100,0	37.5		33.3	100.0	16.7						
Teaching	18.2				100.0				50.0					
Desire More Training	9.1	36.4		12.5				50.0	50.0	100.0		100.0		66.7

Table No. 62 Percentage Distribution of Blood Bank Technologists and Technicians In Various Types of Hospitals by Occupational Level Which They May Hope to Attain

OCCUPATIONAL LEVEL	All Hospitals		Types of Hospitals											
			General Short Term Non Profit		General Short Term - City		General Short Term - Federal		Special Short Term Non Profit		Special Long Term Non Profit		Special Long Term - State	
	Tech nol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech
Present	45.4	41.7	20.0	50.0	100.0	33.3		33.3	100.0				100.0	100.0
Supervisor of Department	54.5	24.9	80.0	25.0		33.3	100.0	33.3						
Teaching	9.1	8.3	20.0							100.0				
Desire More Training		33.3		25.0		33.3		66.7						

Table No. 63 Extent to Which Educational Background Prepared Microbiology Technologists and Technicians For The Functions Presently Performed[1]

OCCUPATIONAL BACKGROUND	All Hospital		Types of Hospitals											
			General Short Term Non Profit		General Short Term - City		General Short Term - Federal		Special Short Term Non Profit		Special Long Term Non Profit		Special Long Term - State	
	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech
High School	4.8	10.0	5.5	12.5		11.0		2.5		25.0			10.0	10.0
College	32.8	19.2	39.2	22.5		2.0	10.0	25.8			20.0		30.0	90.0
Professional Training	34.2	23.3	36.7	15.0		16.0		25.8		52.5	30.0		60.0	
On-the-Job Training	10.4	32.2	15.8	37.5		53.0		20.0		22.5				
Work Experience	20.0	16.1	6.7	12.5		17.0	90.0	25.8			50.0			
Other														

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[1] May not add to 100 percent because of rounding

Table No. 64 Extent to Which Educational Background Prepared Hematology Technologists and Technicians For The Functions Presently Performed[1]

OCCUPATIONAL BACKGROUND	All Hospital		Types of Hospitals											
			General Short Term Non Profit		General Short Term - City		General Short Term - Federal		Special Short Term Non Profit		Special Long Term Non Profit		Special Long Term - State	
	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech
High School	2.7	7.0	6.0	4.3		7.0		6.7		8.3				
College	29.5	10.9	26.0	1.4	25.0	25.0	40.0	2.7	30.0	25.0			20.0	
Professional Training	35.5	34.5	44.0	40.0		25.0	10.0	46.7	60.0	16.7			80.0	100.0
On-the-Job Training	24.1	28.4	24.0	32.9	25.0	33.0	40.0	31.0		26.7				
Work Experience	8.2	15.5		21.4	50.0	10.0	10.0	13.0	10.0	23.3				
Other														

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[1] May not add to 100 percent because of rounding

Table No. 65 Extent to Which Educational Background Prepared Cytotechnologists and Technicians For The Functions Presently Performed[1]

OCCUPATIONAL BACKGROUND	All Hospital		Types of Hospitals											
			General Short Term Non Profit		General Short Term - City		General Short Term - Federal		Special Short Term Non Profit		Special Long Term Non Profit		Special Long Term - State	
	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech
High School		.8						40.0		5.0				
College	32.2	22.9	45.0	30.0	10.0	10.0		40.0		20.0				
Professional Training	17.8	27.9	20.0	10.0	10.0	37.5		50.0		25.0				
On-the-Job Training	50.0	44.5	35.0	60.0	80.0	40.0		10.0		50.0				
Work Experience		.8				2.5								
Other		2.9				10.0								

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[1] May not add to 100 percent because of rounding

Table No. 66 Extent to Which Educational Background Prepared Histology Technologists and Technicians For The Functions Presently Performed[1]

OCCUPATIONAL BACKGROUND	All Hospital		Types of Hospitals											
			General Short Term Non Profit		General Short Term - City		General Short Term - Federal		Special Short Term Non Profit		Special Long Term Non Profit		Special Long Term - State	
	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech
High School	12.0	15.4	15.0	3.4		8.3		20.0		50.0				25.0
College	37.0	6.4	36.2		40.0			16.7						20.0
Professional Training		22.3		28.3		20.0		15.0						55.0
On-the-Job Training	41.0	35.5	36.2	68.3	60.0	30.0		15.0		50.0				
Work Experience	10.0	20.4	12.5			41.7		33.3						
Other														

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[1] May not add to 100 percent because of rounding

Table No, 67 Extent to Which Educational Background Prepared Biochemistry Technologists and Technicians For the Functions Presently Performed[1/]

OCCUPATIONAL BACKGROUND	All Hospital		Types of Hospitals											
			General Short Term Non Profit		General Short Term - City		General Short Term - Federal		Special Short Term Non Profit		Special Long Term Non Profit		Special Long Term - State	
	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech	Technol	Tech
High School	3.8	6.7	2.2	5.1	10.0	6.7	7.0	10.0		10.0				5.0
College	36.4	6.1	37.0	10.0	30.0		48.3	9.2	20.0					
Professional Training	40.4	41.4	44.0	29.5	60.0	56.7	25.0	44.2	45.0	40.0		90.0		36.7
On-the-Job Training	15.7	29.4	12.8	48.4			13.0	12.5	35.0	50.0		10.0		58.3
Work Experience	1.8	14.1		7.0		36.7	6.7	24.2						
Other	1.8	4.0												

[1/] May not add to 100 percent because of rounding

Table No. 68 Extent to Which Educational Background Prepared Blood Bank Technologists and Technicians For The Functions Presently Performed[1/]

OCCUPATIONAL BACKGROUND	All Hospital		Types of Hospitals											
			General Short Term Non Profit		General Short Term - City		General Short Term - Federal		Special Short Term Non Profit		Special Long Term Non Profit		Special Long Term - State	
	Technol	Tech	Technol.	Tech.	Technol	Tech.	Technol	Tech.	Technol.	Tech.	Technol	Tech.	Technol	Tech
High School	7.4	5.4	9.2	8.2	25.0	1.7	—	24.3					10.0	10.0
College	19.3	4.6	15.4	8.2	50.0		25.0	1.7	10.0	25.0			25.0	
Professional Training	39.4	17.9	46.7	25.0	25.0	6.7	75.0	26.7					45.0	15.0
On-the-Job Training	25.4	50.8	10.0	22.5		65.0		38.3	90.0	75.0			30.0	75.0
Work Experience	8.5	21.3	18.7	40.0		26.7		5.0						
Other														

[1/] May not add to 100 percent because of rounding

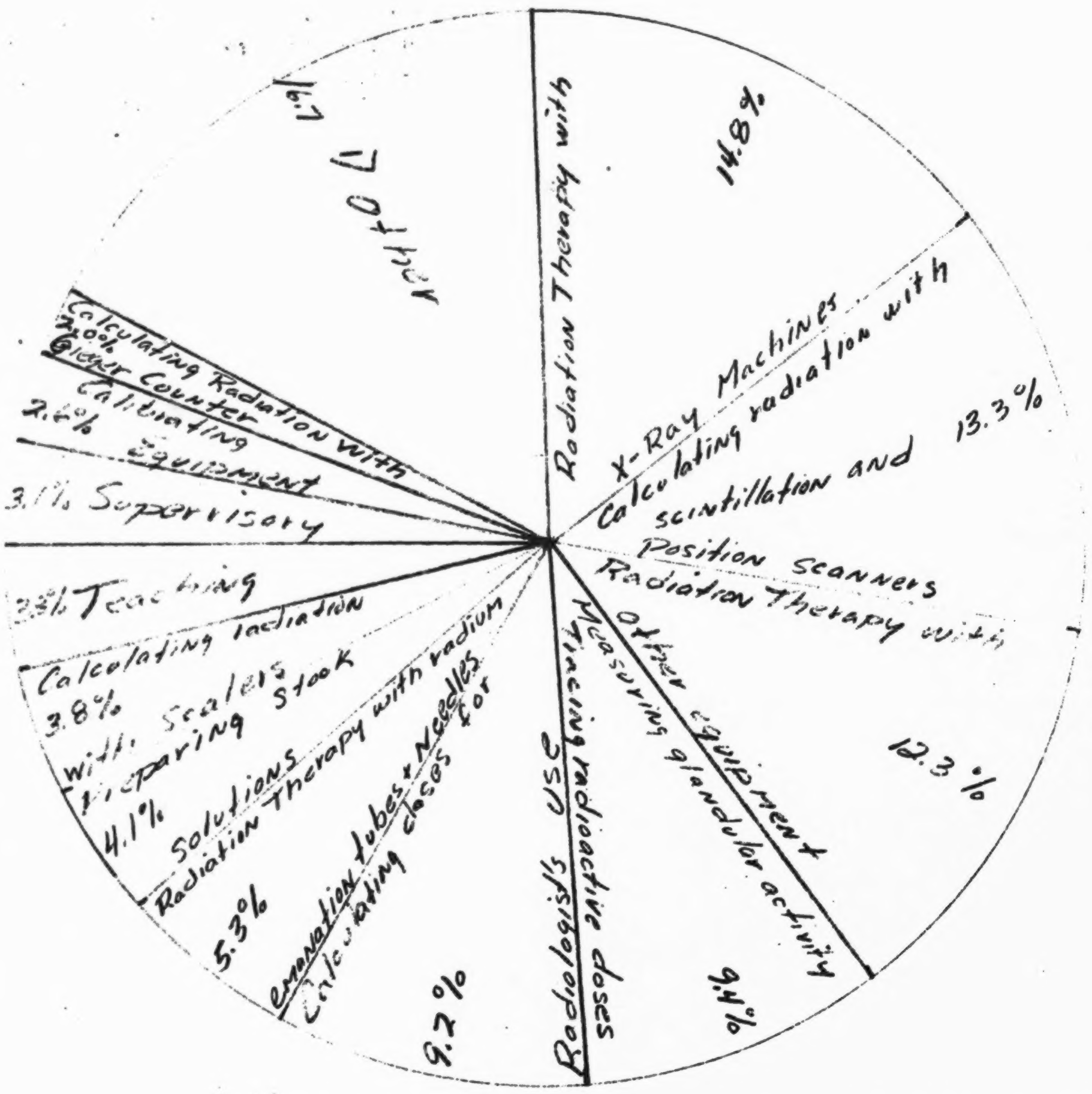
Table No.69 Percentage of Total Working Time of Radiation Therapists Spent on Various Functions, By Types of Hospitals

FUNCTIONS	All Hospitals	Types of Hospitals					
		General Short Term Non Profit	General Short Term - City	General Short Term - Federal	Special Short Term Non Profit	Special Long Term Non Profit	Special Long Term - State
	Percent	Percent	Percent	Percent	Percent	Percent	Percent
1. Preparing stock solutions of radioactive materials	4.1	.3	0	15.0	3.0	NONE	0
2. Calculating doses to be administered by radiologist	9.2	.5	28.3	7.0	2.0		0
3. Measuring glandular activity tracing radioactive doses	9.4	.3	0	37.0	1.0		0
4. Calculating amount of radiation in sources by using equipment such as:							
4a. Geiger Counters	2.0	.8	.7	2.3	12.0		0
4b. Electroscopes	.6	0	0	0	2.0		5.0
4c. Scalers	3.8	2.0	3.3	2.3	20.0		0
4d. Scintillation and position	13.3	.3	25.0	11.3	50.0		0
4e. Scintigrams	.3	0	0	1.3	0		0
5. Calibrating equipment	2.6	.5	3.3	6.3	0		0
6. Subjecting patients to radiation and X-Ray therapy, as prescribed by radiologist using such equipment as?							
6a. Radium emanation tubes and needles	5.3	14.5	0	0	0		5.0
6b. X-Ray Machines	14.8	25.8	3.3	.7	3.0		60.0
6c. Other	12.3	24.8	16.7	.3	0		0
7. Execute: following standard laboratory techniques							
7a. Red cell survival	1.2	.3	0	4.3	0		0
7b. Fat absorption studies	.6	0	0	2.3	0		0
8. Making moulds	.6	0	1.7	0	3.0		0
9. Planning the field of treatment	1.8	3.8	1.7	.3	0		0
10. Research	.4	0	0	1.7	0		0
11. Teaching	3.8	6.3	6.7	0	0		0
12. Supervisory	3.1	2.3	3.3	.6	0		0
13. Other	11.3	19.0	6.7	2.3	3.0		30.0
Total Number of Persons	12	4	3	3	1	0	1

Table No. 70 Percentage of Radiation Therapists Performing Various Functions By Types of Hospitals

FUNCTIONS	All Hospitals	Types of Hospitals					
		General Short Term Non Profit	General Short Term - City	General Short Term - Federal	Special Short Term Non Profit	Special Long Term Non Profit	Special Long Term - State
	Percent	Percent	Percent	Percent	Percent	Percent	Percent
1. Preparing stock solutions of radio-active materials	41.7	25.0	0	100.0	100.0	NONE	0
2. Calculating doses to be administered by radiologist	75.0	50.0	100.0	100.0	100.0		0
3. Measuring glandular activity tracing radioactive doses	41.7	25.0	0	100.0	100.0		0
4. Calculating amount of radiation in sources by using equipment such as:							
4a. Geiger Counters	66.7	50.0	67.0	100.0	100.0		0
4b. Electroscopes	16.7	0	0	0	100.0		100.0
4c. Scalers	58.3	25.0	67.0	100.0	100.0		0
4d. Scintillation and position scanners	58.3	25.0	67.0	100.0	100.0		0
4e. Scintigrams	25.0	0	0	100.0	0		0
5. Calibrating equipment	58.3	50.0	67.0	100.0	0		0
6. Subjecting patients to radiation and X-Ray therapy, as prescribed by radiologist using such equipment as:							
6a. Radium emanation tubes and needles	25.0	50.0	0	0	0		100.0
6b. X-Ray Machines	50.0	50.0	33.0	33.0	100.0		100.0
6c. Other	33.3	50.0	33.0	33.0	0		0
7. Execute: following standard laboratory techniques							
7a. Red cell survival	33.3	25.0	0	100.0	0		0
7b. Fat absorption studies	16.7	0	0	67.0	0		0
8. Making moulds	16.7	0	33.0	0	100.0		0
9. Planning the field of treatment	25.0	25.0	33.0	33.0	0		0
10. Research	8.3	0	0	33.0	0		0
11. Teaching	41.7	75.0	67.0	0	0		0
12. Supervisory	33.3	25.0	33.0	67.0	0		0
13. Other	75.0	75.0	67.0	67.0	100.0		100.0
Total Number of Persons	12	4	3	3	1	0	1

Figure No. 20 RADIATION THERAPISTS



1/ Other:

4b. Using electroscopes
4e. Using Scintigrams
7a. Execute lab. techniques: Red cell survival
7b. Fat absorption studies
8. Making moulds
9. Planning the field of treatment
10. Research
11. Other

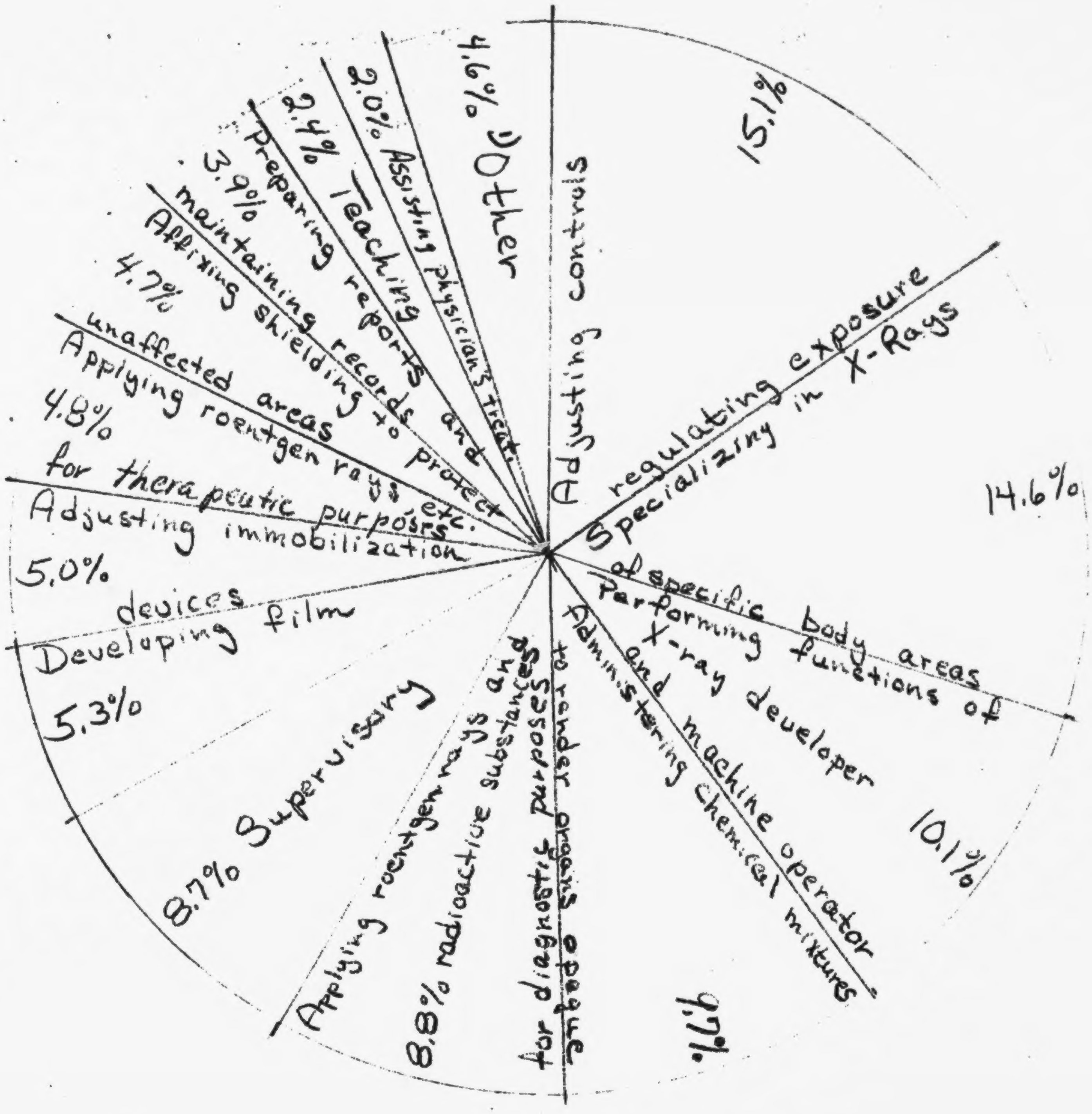
Table No. 71 Percentage of Total Working Time of Radiologic Technicians Spent on Various Functions by Types of Hospitals

FUNCTIONS	All Hospitals	Types of Hospitals					
		General Short Term Non Profit	General Short Term - City	General Short Term - Federal	Special Short Term Non Profit	Special Long Term Non Profit	Special Long Term - State
	Percent	Percent	Percent	Percent	Percent	Percent	Percent
1. Adjusting immobilization devices	5.0	5.4	6.3	1.2	10.5	1.0	7.3
2. Affixing shielding to protect unaffected areas	4.7	5.3	5.0	1.2	10.5	1.0	8.3
3. Performing all the functions of an X-Ray developer and machine operator	10.1	7.2	1.3	12.7	10.5	24.0	26.0
4. Administering chemical mixtures orally or as enemas to render organs opaque	9.7	10.8	8.2	2.8	10.5	2.0	25.7
5. Applying roentgen rays and radioactive substances to patients for therapeutic purposes	4.8	6.8	9.8	.5	0	.5	0
6. Assisting in treating diseased or affected areas of body, under supervision of physician by exposing area to specified concentration of X-Ray for prescribed periods of time	2.0	3.4	.5	1.0	4.0	.5	0
7. Assisting in therapy requiring application of medium or radioactive isotopes	.4	.4	0	0	4.0	0	0
8. **Developing film in accordance with photographic techniques**	5.3	4.4	2.7	4.2	4.0	4.0	5.7
9. Preparing reports and maintaining records of services rendered	3.9	4.0	3.0	6.3	0	7.0	1.0
10. Specializing in taking X-Rays of specific areas of body	14.6	14.6	20.5	16.0	10.5	3.0	10.7
11. Adjusting control regulating length and intensity of exposure	15.1	16.2	20.5	12.7	10.5	12.0	8.7
12. Making minor adjustments to equipment	1.5	1.6	.7	1.5	4.0	.5	1.7
13. Applying roentgen rays and radioactive substances to patients for diagnostic purposes	8.8	8.6	18.0	2.3	10.5	12.0	1.7
14. Research	.8	.7	.5	.7	2.0	0	0
15. Teaching	2.4	1.4	1.3	8.5	0	0	0
16. Supervisory	8.7	8.0	.3	25.8	0	9.0	0
17. Other	1.9	1.0	.8	2.8	5.5	3.0	3.3
Total Number of Persons	33	14	6	6	2	2	3

Table No. 72 Percentage of Radiologic Technicians Performing Various Functions by Types of Hospitals

FUNCTIONS	All Hospitals	Types of Hospitals					
		General Short Term Non Profit	General Short Term - City	General Short Term - Federal	Special Short Term Non Profit	Special Long Term Non Profit	Special Long Term - State
	Percent	Percent	Percent	Percent	Percent	Percent	Percent
1. Adjusting immobilization devices	84.8	71.4	100.0	83.3	100.0	100.0	100.0
2. Affixing shielding to protect unaffected areas	84.8	78.6	83.3	83.3	100.0	100.0	100.0
3. Performing all the functions of an X-Ray developer and machine operator	84.6	92.8	66.7	83.3	100.0	100.0	66.7
4. Administering chemical mixtures orally or as enemas to render organs opaque	87.9	85.7	83.3	83.3	100.0	100.0	100.0
5. Applying roentgen rays and radioactive substances to patients for therapeutic purposes	39.4	57.1	50.0	16.7	0	50.0	0
6. Assisting in treating diseased or affected areas of body, under supervision of physician by exposing area to specified concentration of X-Ray for prescribed periods of time	39.4	42.8	50.0	33.3	50.0	50.0	0
7. Assisting in therapy requiring application of medium or radioactive isotopes	9.1	14.3	0	0	50.0	0	0
8. Developing film in accordance with photographic techniques	81.8	85.7	100.0	66.7	50.0	100.0	66.7
9. Preparing reports and maintaining records of services rendered	60.6	71.4	33.3	66.7	0	100.0	66.7
10. Specializing in taking X-Rays of specific areas of the body	90.9	92.8	100.0	83.3	100.0	50.0	100.0
11. Adjusting control regulating length and intensity of exposure	96.9	100.0	100.0	83.3	100.0	100.0	100.0
12. Making minor adjustments to equipment	78.8	85.7	66.7	83.3	50.0	50.0	100.0
13. Applying roentgen rays and radioactive substances to patients for diagnostic purposes	84.8	85.7	100.0	66.7	100.0	100.0	66.7
14. Research	24.2	14.3	50.0	33.3	50.0	0	0
15. Teaching	45.5	42.8	66.7	83.3	0	0	0
16. Supervisory	48.5	57.1	33.3	83.3	0	50.0	0
17. Other	39.4	35.7	16.7	50.0	100.0	50.0	33.3
Total Number of Persons	33	14	6	6	2	2	3

Figure No. 21 RADIOLOGIC TECHNICIANS



[1] Other: 7. Assisting in therapy requiring application of medium or radioactive isotopes

12. Making minor adjustments to equipment

14. Research

17. Other

Table No. 73 Percentage of Total Working Time of X-Ray Developing Machine Operators Spent on Various Functions by Types of Hospitals

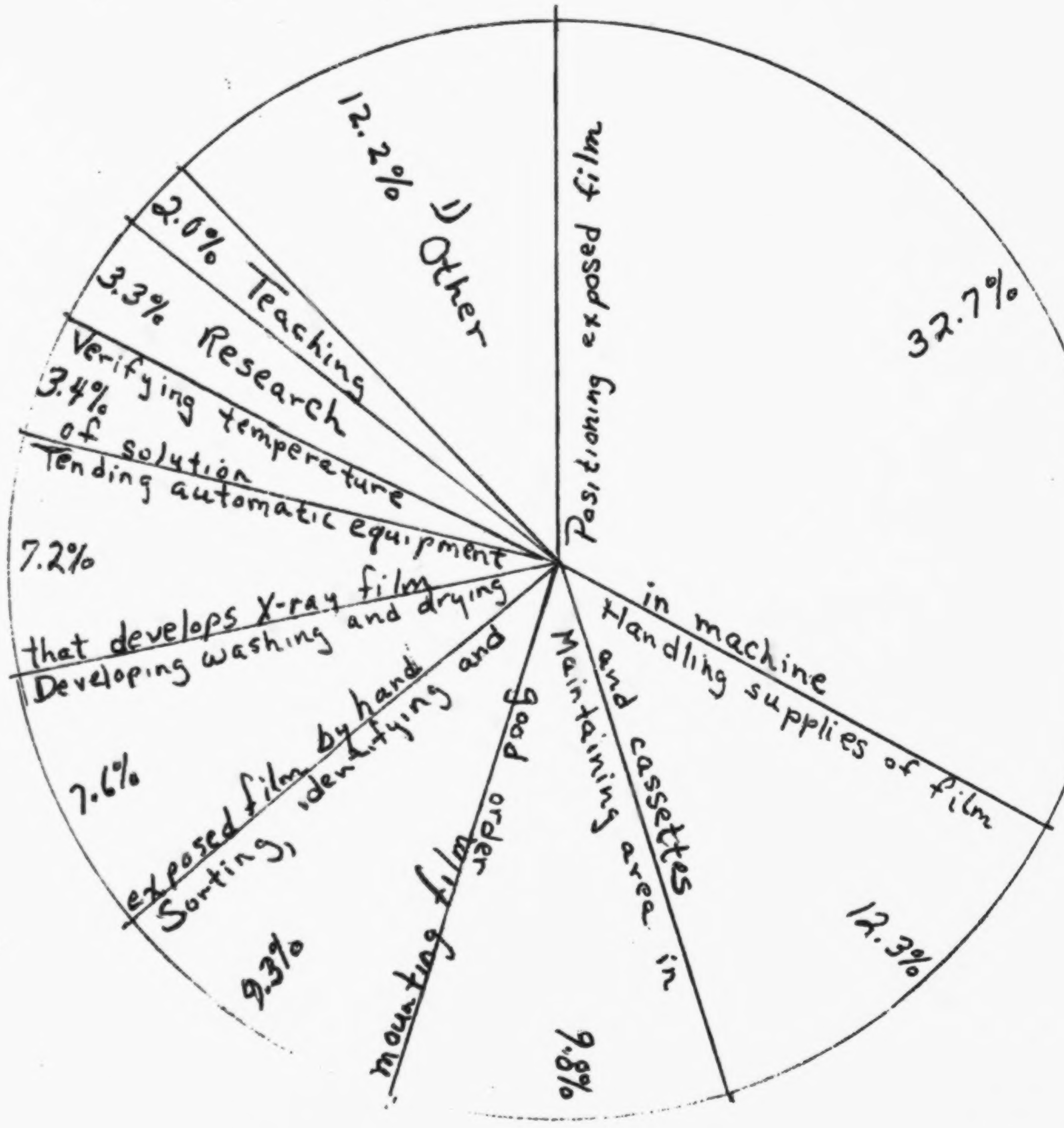
FUNCTIONS	All Hospitals	Types of Hospitals					
		General Short Term Non Profit	General Short Term - City	General Short Term - Federal	Special Short Term Non Profit	Special Long Term Non Profit	Special Long Term - State
	Percent	Percent	Percent	Percent	Percent	Percent	Percent
1. Maintaining his area in good order	9.8	5.4	8.5	30.0	14.0	NONE	NONE
2. Sorting and identifying film and mounting them in viewing apparatus	9.3	10.4	16.0	0	0		
3. Mixing developing solutions according to specifications	1.1	0	5.0	0	0		
4. Positioning exposed film in machine which automatically carries them through solutions that produce and fix image on film	32.7	42.2	18.5	30.0	14.0		
5. Tending automatic equipment that developed X-Ray film	7.2	8.0	5.5	0	14.0		
6. Verifying temperature of solution by touching raised graduations on dial	3.4	.6	5.0	5.0	14.0		
7. Handling supplies of film and cassettes	12.3	7.0	16.0	30.0	14.0		
8. Developing, washing, and drying exposed film by hand in darkroom	7.6	2.2	21.0	1.0	14.0		
9. Performing some of the functions of radiologic technologist	0	0	0	0	0		
10. Blind	11.0	20.0	0	0	0		
11. Research	3.3	6.0	0	0	0		
12. Teaching	2.0	1.8	2.5	4.0	0		
13. Supervisory	0	0	0	0	0		
14. Other	11.1	16.0	2.0	0	16.0		
Total Number of Persons	9	5	2	1	1	0	0

Table No. 74 Percentage of X-Ray Developing Machine Operators Performing

Various Functions By Types of Hospitals

FUNCTIONS	All Hospitals	Types of Hospitals					
		General Short Term Non Profit	General Short Term - City	General Short Term - Federal	Special Short Term Non Profit	Special Long Term Non Profit	Special Long Term - State
	Percent	Percent	Percent	Percent	Percent	Percent	Percent
1. Maintaining his area in good order	100.0	100.0	100.0	100.0	100.0	NONE	NONE
2. Sorting and identifying film and mounting them in viewing apparatus	55.5	60.0	100.0	0	0		
3. Mixing developing solutions according to specifications	11.1	0	50.0	0	0		
4. Positioning exposed film in machine which automatically carries them through solutions that produce and fix image on film	100.0	100.0	100.0	100.0	100.0		
5. Tending automatic equipment that developed X-Ray film	77.8	80.0	100.0	0	100.0		
6. Verifying temperature of solution by touching raised graduations on dial	55.5	40.0	50.0	100.0	100.0		
7. Handling supplies of film and cassettes	88.9	80.0	100.0	100.0	100.0		
8. Developing, washing, and drying exposed film by hand in darkroom	77.8	60.0	100.0	100.0	0		
9. Performing some of the functions of radiologic technologist	0	0	0	0	0		
10. Blind	110	20.0	0	0	0		
11. Research	11.1	20.0	0	0	0		
12. Teaching	44.4	40.0	50.0	0	0		
13. Supervisory	0	0	0	50.0	0		
14. Other	77.8	80.0	100.0	100.0	100.0		
Total Number of Persons	9	5	2	1	1	0	0

Figure No. 22 X-RAY DEVELOPING MACHINE OPERATORS



1/ Other: 3. Mixing developing solutions according to specifications

14. Other

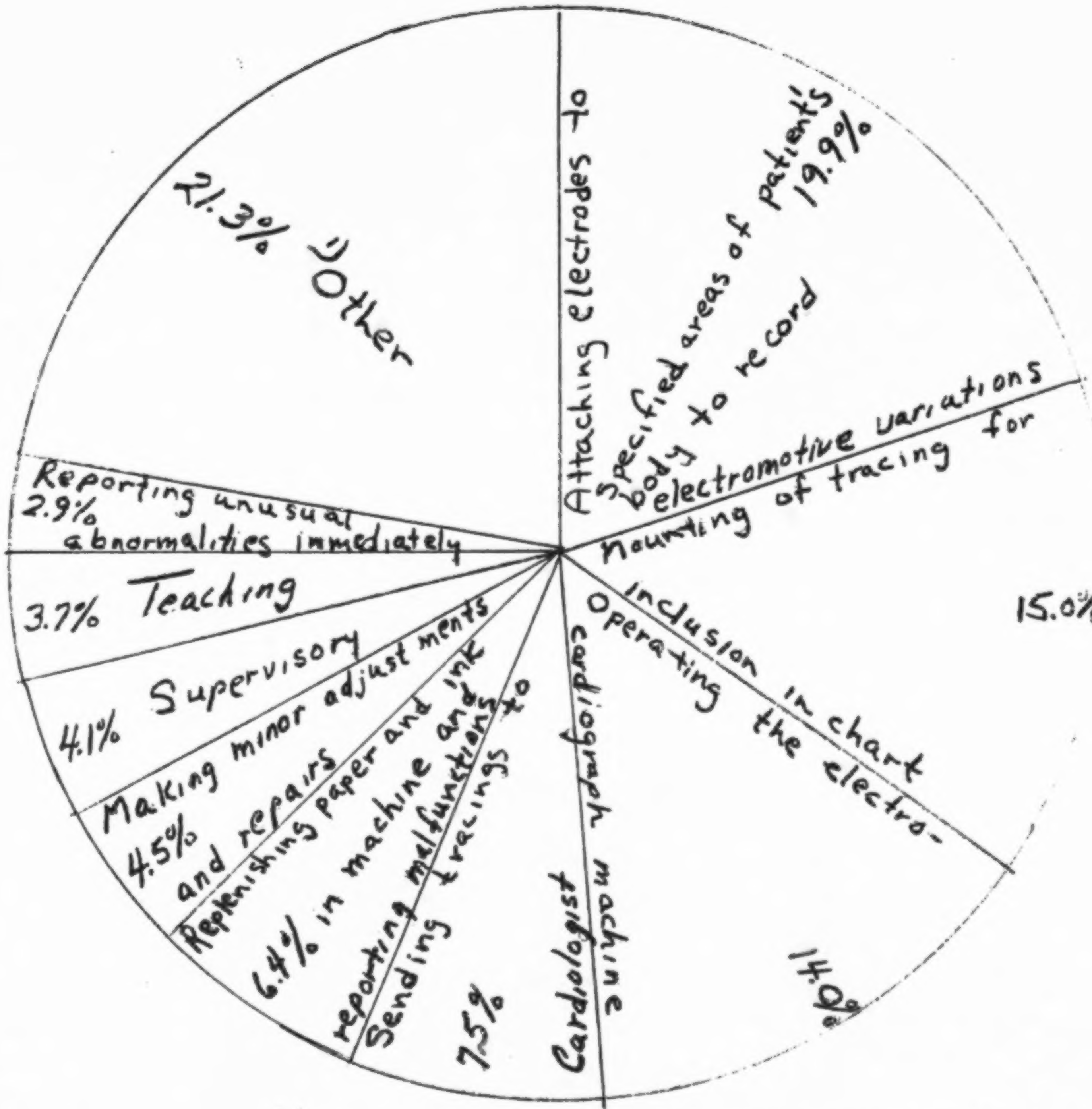
Table No. 75 Percentage of Total Working Time of Electrocardiograph Technicians Spent on Various Functions, by Types of Hospitals

FUNCTIONS	All Hospitals	Types of Hospitals					
		General Short Term Non Profit	General Short Term - City	General Short Term - Federal	Special Short Term Non Profit	Special Long Term Non Profit	Special Long Term - State
	Percent	Percent	Percent	Percent	Percent	Percent	Percent
1. Sending tracings to Cardiologist for analysis and interpretation	7.5	5.1	8.7	6.0	13.5	NONE	9.5
2. Replenishing supply of paper and ink in machine and reporting malfunctions	6.4	7.3	4.3	6.0	4.0		9.5
3. Attaching electrodes to specified areas of patient's body, moving chest electrode to successive positions across chest to record electromotive variations occurring in various of heart muscle	19.9	25.0	18.0	6.0	26.5		7.5
4. Mounting of tracing for inclusion in chart	15.0	16.4	12.7	6.0	7.5		20.0
5. Operating the electrocardiograph machine	14.0	18.4	18.3	6.0	4.0		5.0
6. Performing basal metabolism (B.M.R.)	1.6	1.1	0	4.5	0		4.5
7. Making minor adjustment and repairs	4.5	2.0	5.0	4.0	12.0		5.5
8. Assisting the physician or cardiologist by reporting unusual abnormalities immediately	2.9	2.3	1.0	.7	2.5		9.5
9. Step test	1.2	1.7	1.0	.7	.5		0
10. Research	.9	.3	.7	3.3	0		0
11. Teaching	3.7	1.7	3.7	3.3	13.5		0
12. Supervisory	4.1	1.6	6.0	3.3	13.5		0
13. Other	17.6	16.8	20.0	42.5	2.0		7.5
Total Number of Persons	16	7	3	2	2	0	2

Table No. 76 Percentage of Electrocardiograph Technicians Performing Various Functions, By Types of Hospitals

FUNCTIONS	All Hospitals	Types of Hospitals					
		General Short Term Non Profit	General Short Term - City	General Short Term - Federal	Special Short Term Non Profit	Special Long Term Non Profit	Special Long Term - State
	Percent	Percent	Percent	Percent	Percent	Percent	Percent
1. Sending tracings to Cardiologist for analysis and interpretation	100.0	85.7	100.0	100.0	100.0	NONE	100.0
2. Replenishing supply of paper and ink in machine and reporting malfunctions	93.8	100.0	66.7	100.0	100.0		100.0
3. Attaching electrodes to specified areas of patient's body, moving chest electrode to successive positions across chest to record electromotive variations occurring in various of heart muscle	93.8	85.7	100.0	100.0	100.0		100.0
4. Mounting of trasing for inclusion in chart	93.8	85.7	100.0	100.0	100.0		100.0
5. Operating the electrocardiograph machine	87.5	85.7	100.0	100.0	100.0		50.0
6. Performing basal metabolism (B.M.R.)	50.0	71.4	0	100.0	0		50.0
7. Making minor adjustment and repairs	87.5	71.4	100.0	100.0	100.0		100.0
8. Assisting the physician or cardiologist by reporting unusual abnormalities immediately	68.8	57.1	66.7	100.0	50.0		100.0
9. Step test	68.8	85.7	66.7	100.0	50.0		0
10. Research	18.8	14.3	33.3	50.0	0		0
11. Teaching	56.3	57.1	66.7	50.0	100.0		0
12. Supervisory	50.0	42.9	66.7	50.0	100.0		0
13. Other	81.3	100.0	100.0	50.0	50.0		50.0
Total Number of Persons	16	7	3	2	2	0	2

Figure No. 23 ELECTROCARDIOGRAPH TECHNICIANS



1/ Other:
6. Performing basal metabolism (BMR)
9. Step Test
10. Research
13. Other

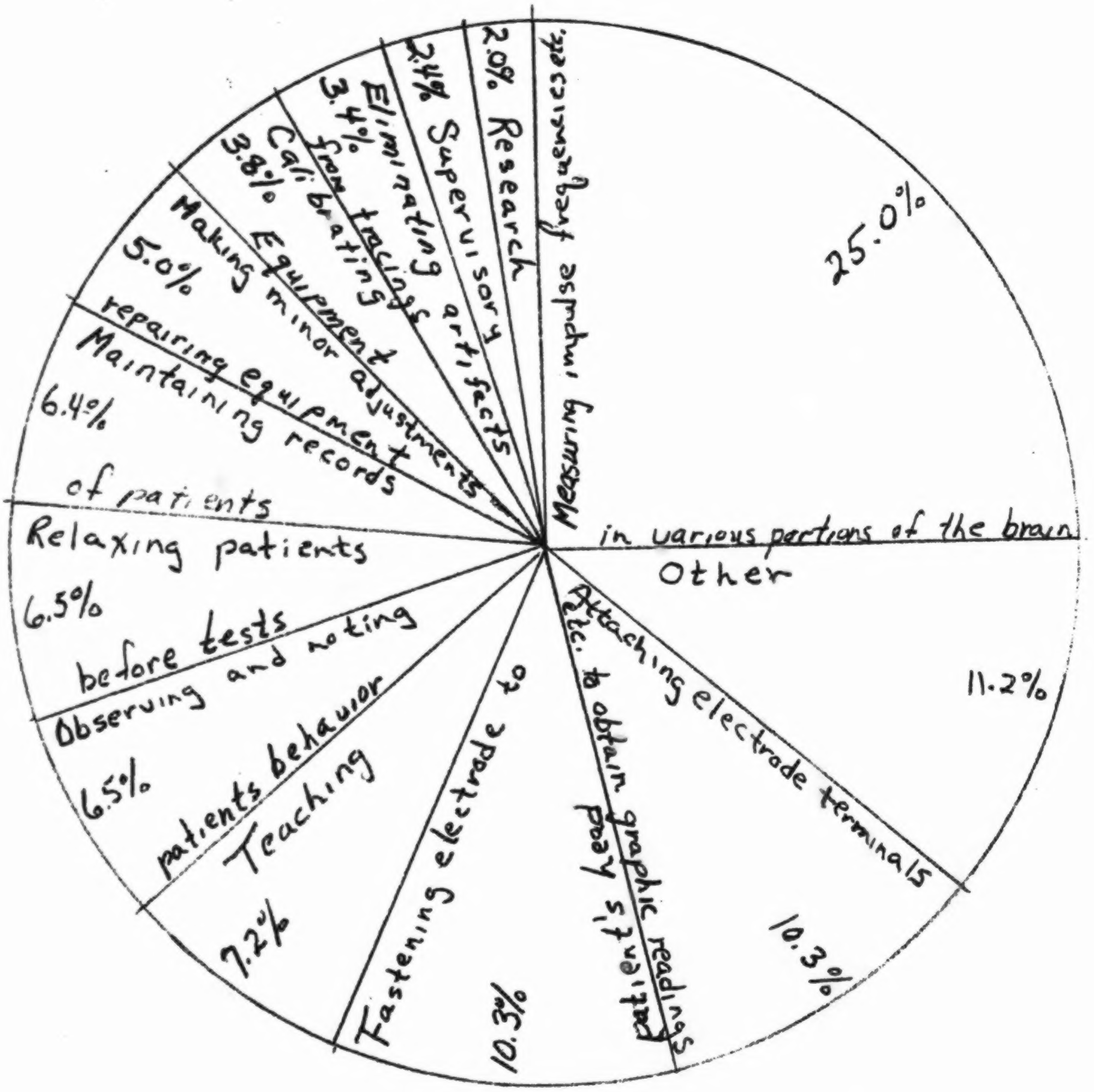
Table No. 77 Percentage of Total Working Time of Electroencephalograph Technicians Spent On Various Functions, By Types of Hospitals

FUNCTIONS	All Hospitals	Types of Hospitals					
		General Short Term Non Profit	General Short Term - City	General Short Term - Federal	Special Short Term Non Profit	Special Long Term Non Profit	Special Long Term - State
	Percent	Percent	Percent	Percent	Percent	Percent	Percent
1. Maintaining records of patients	6.4	9.2	3.5	1.5	3.5	NONE	17.0
2. Measuring impulse frequencies and differences in electrical potential between various portions of the brain using equipment that records data as a series of irregular lines on a continuous graph to be used by medical practitioner in diagnosing brain disorders	25.0	25.7	9.5	60.0	4.0		25.0
3. Attaching electrode terminals to switch box and turning selector switches to obtain combinations for complete sets of graphic readings	10.3	9.5	13.5	11.5	3.0		20.0
4. Fastening electrode to patient's head, using adhesive tape, adhesive paste, or pins inserted into the skull	10.3	10.5	15.5	7.0	3.5		20.0
5. Relaxing patients before tests	6.5	5.5	13.5	6.0	3.0		5.0
6. Observing patients' behavior and making notes on graph	6.5	10.5	13.5	1.5	.5		0
7. Making minor adjustments -- repairing equipment, such as replacing condensers and refilling tracing pins	5.0	5.5	9.5	5.0	1.0		2.0
8. Elminating all artifacts from tracings	3.4	5.2	4.0	1.5	3.0		0
9. Calibrating equipment	3.8	6.0	4.0	3.5	.7		1.0
10. Research	2.0	0	2.0	1.5	7.5		0
11. Teaching	7.2	3.0	1.0	.5	32.5		0
12. Supervisory	2.4	0	0	.5	12.5		0
13. Other	11.2	12.5	9.5	0	24.5		5.0
Total Number of Persons	11	4	2	2	2	0	1

Table No. 78 . Percentage of Electroencephalograph Technicians Performing Various Functions, By Types of Hospitals

FUNCTIONS	All Hospitals	Types of Hospitals					
		General Short Term Non Profit	General Short Term - City	General Short Term - Federal	Special Short Term Non Profit	Special Long Term Non Profit	Special Long Term - State
	Percent	Percent	Percent	Percent	Percent	Percent	Percent
1. Maintaining records of patients	90.9	100.0	50.0	100.0	100.0		100.0
2. Measuring impulse frequencies and differences in electrical potential between various portions of the brain using equipment that records data as a series of irregular lines on a continuous graph to be used by medical practitioner in diagnosing brain disorders	100.0	100.0	100.0	100.0	100.0		100.0
3. Attaching electrode terminals to switchbox and turning selector switches to obtain combinations for complete sets of graphic readings	90.9	100.0	100.0	100.0	50.0		100.0
4. Fastening electrode to patient's head, using adhesive tape, adhesive paste, or pins inserted into the skull	100.0	100.0	100.0	100.0	100.0		100.0
5. Relaxing patients before tests	90.9	100.0	100.0	100.0	50.0		100.0
6. Observing patients' behavior and making notes on graph	81.8	100.0	100.0	100.0	50.0		0
7. Making minor adjustments -- repairing equipment, such as replacing condensers and refilling tracing pins	100.0	100.0	100.0	100.0	100.0		100.0
8. Eliminating all artifacts from tracings	81.8	100.0	100.0	100.0	50.0		0
9. Calibrating equipment	100.0	100.0	100.0	100.0	100.0		100.0
10. Research	36.4	0	50.0	100.0	50.0		0
11. Teaching	54.5	50.0	50.0	50.0	100.0		0
12. Supervisory	18.2	0	0	50.0	50.0		0
13. Other	63.6	75.0	50.0	0	100.0		100.0
Total Number of Persons	11	4	2	2	2	0	1

Figure No. 24 ELECTROENCEPHOLOGRAPH TECHNICIAN



1/ Other: 13. Other

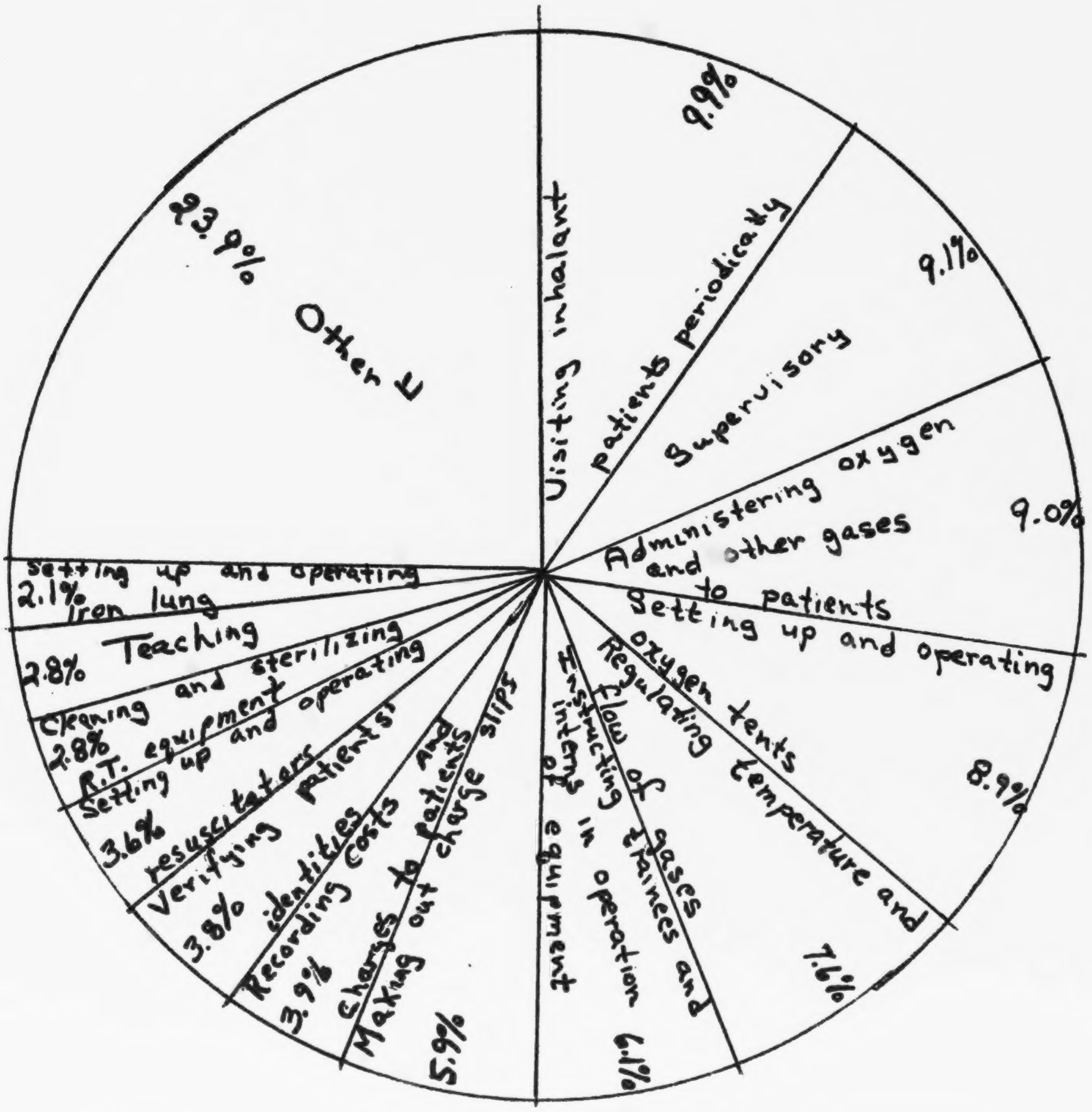
Table No. 79 Percentage of Total Working Time of Inhalation Therapists Spent On Various Functions, By Types of Hospitals

FUNCTIONS	All Hospitals	Types of Hospitals					
		General Short Term Non Profit	General Short Term - City	General Short Term - Federal	Special Short Term Non Profit	Special Long Term Non Profit	Special Long Term - State
	Percent	Percent	Percent	Percent	Percent	Percent	Percent
1. Examining patients' charts and identifying bands and consulting with attending nurse to verify patients' identities	3.8	4.1	.3	4.0	100.0	NONE	NONE
2. Recording cost of materials and equipment used and charges made to patients	3.9	3.1	5.3	3.3	100.0		
3. Making out charge slips for inhalants, equipment used and special services rendered	5.9	7.2	5.3	.7	100.0		
4. Setting up and operating incubators	.4	.4	.7	.3	0		
5. Setting up and operating iron lungs	2.1	2.3	1.7	.7	5.0		
6. Setting up and operating resuscitators	3.6	4.6	3.0	.7	5.0		
7. Setting up and operating oxygen tents	8.9	7.0	2.0	23.3	5.0		
8. Observing gages and turning values to regulate temperature and flow of gases.	7.6	8.9	2.3	9.7	5.0		
9. Administering oxygen and other gases to patients	9.0	10.3	4.0	11.0	5.0		
10. Instructing trainees and interns in operation of equipment	6.1	4.6	1.7	15.7	5.0		
11. Visiting inhalant patients periodically	9.9	10.6	6.0	13.0	5.0		
12. Running blood gases on patients to determine PO_2.PCO_2, Ph, HCO_3.	1.6	2.5	.3	.3	0		
13. Participating in Cardiac Arrest Term	1.9	1.2	2.0	3.3	5.0		
14. Cleaning and sterilizing R.T. equipment	2.0	1.8	6.7	3.0	0		
15. Research	.9	.2	1.3	0	10.0		
16. Teaching	2.8	2.1	7.0	.7	5.0		
17. Supervisory	9.1	14.4	1.3	2.0	0		
18. Other	18.5	13.4	50.0	5.0	15.0		
19. Disassembling and Reassembling	.3	5.0	0	0	0		
20. Maintain Equipment	.3	5.0	0	0	0		
Total Number of Persons	17	10	3	3	1	0	0

Table No. 80 Percentage of Inhalation Therapists Performing Various Functions, By Types of Hospitals

FUNCTIONS	All Hospitals	Types of Hospitals					
		General Short Term Non Profit	General Short Term - City	General Short Term - Federal	Special Short Term Non Profit	Special Long Term Non Profit	Special Long Term - State
	Percent	Percent	Percent	Percent	Percent	Percent	Percent
1. Examining patients' charts and identifying bands and consulting with attending nurse to verify patients' identities	70.6	80.0	33.3	66.7	100.0	NONE	NONE
2. Recording cost of materials and equipment used and charges made to patients	70.6	60.0	100.0	66.7	100.0		
3. Making out charge slips for inhalants, equipment used and special services rendered	82.4	90.0	100.0	33.3	100.0		
4. Setting up and operating incubators	23.5	20.0	33.3	33.3	0		
5. Setting up and operating iron lungs	35.3	10.0	66.7	66.7	100.0		
6. Setting up and operating resuscitators	76.5	70.0	100.0	66.7	100.0		
7. Setting up and operating oxygen tents	88.2	80.0	100.0	100.0	100.0		
8. Observing gages and turning valves to regulate temperature and flow of gases.	94.1	90.0	100.0	100.0	100.0		
9. Administering oxygen and other gases to patients.	94.1	100.0	66.7	100.0	100.0		
10. Instructing trainees and interns in operation of equipment	82.4	80.0	66.7	100.0	100.0		
11. Visiting inhalant patients periodically	94.1	90.0	100.0	100.0	100.0		
12. Running blood gases on patients to determine PO_2, PCO_2, Ph, HCO_3.	29.4	30.0	33.3	33.3	0		
13. Participating in Cardiac Arrest Team	88.2	80.0	100.0	100.0	100.0		
14. Cleaning and sterilizing R.T. equipment	29.4	30.0	33.3	33.3	0		
15. Research	11.8	10.0	33.3	0	100.0		
16. Teaching	58.8	50.0	66.7	66.7	100.0		
17. Supervisory	47.1	50.0	66.7	33.3	0		
18. Other	70.6	60.0	100.0	66.7	100.0		
19. Disassembling and Reassembling	5.9	10.0	---	---	---		
20. Maintain Equipment	5.9	10.0	---	---	---		
Total Number of Persons	17	10	3	3	1	0	0

Figure No. 25 INHALATION THERAPISTS



[1] Other:

4. Setting up and operating incubators
12. Running blood gases on patients to determine PO_2, PCO_2, Ph, HCO_3
13. Participating in Cardiac Arrest team
15. Research
19. Disassembling and Reassembling
20. Maintain equipment
18. Other

Table No.81 Percentage Distribution of Radiation Therapists in Various Types of Hospitals By Number of Years Employed at Present Occupation[1/]

YEARS EMPLOYED AT PRESENT OCCUPATION	All Hospitals	Types of Hospitals					
		General Short Term Non Profit	General Short Term - City	General Short Term - Federal	Special Short Term Non Profit	Special Long Term Non Profit	Special Long Term - State
Less than 1 year	25.0	0	66.7	0	100.0		0
1 to 3 years	25.0	25.0	0	66.7	0		0
4 to 6 years	16.7	0	33.3	33.3	0		0
7 to 9 years							
10 to 14 years							
15 years and over	33.3	75.0	0	0	0		100.0
Total Number of Personnel	12	4	3	3	1		1

[1/] May not add to 100 percent because of rounding.

Table No. 82 Percentage Distribution of Radiological Techicians In Various Types of Hospitals

By Number of Years Employed At Present Occupation[1]

YEARS EMPLOYED AT PRESENT OCCUPATION	All Hospitals	Types of Hospitals					
		General Short Term Non Profit	General Short Term - City	General Short Term - Federal	Special Short Term Non Profit	Special Long Term Non Profit	Special Long Term - State
Less than 1 year	12.1	14.3	16.6	0	50.0	0	0
1 to 3 years	42.4	57.1	66.8	0	0	0	66.7
4 to 6 years	15.1	14.3	16.6	16.6	0	0	33.3
7 to 9 years	3.0	0	0	16.6	0	0	0
10 to 14 years	6.1	0	0	16.6	0	50.0	0
15 years and over	21.1	14.3	0	50.0	50.0	50.0	0
Total Number of Personnel	33	14	6	6	2	2	3

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[1] May not add to 100 percent because of rounding.

Table No. 83 Percentage Distribution of X-Ray Developing Machine Operators In Various Types of Hospitals by Number of Years Employed at Present Occupation[1]

YEARS EMPLOYED AT PRESENT OCCUPATION	All Hospitals	Types of Hospitals					
		General Short Term Non Profit	General Short Term - City	General Short Term - Federal	Special Short Term Non Profit	Special Long Term Non Profit	Special Long Term - State
Less than 1 year							
1 to 3 years	22.2	20.0	50.0	0	0		
4 to 6 years	22.2	20.0	50.0	0	0		
7 to 9 years	33.3	40.0	0	100.0	0		
10 to 14 years	22.2	20.0	0	0	100.0		
15 years and over							
Total Number of Personnel	9	5	2	1	1		

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[1] May not add to 100 percent because of rounding.

Table No. 84 Percentage Distribution of EKG and EEG Technicians In Various Types of Hospitals By Number of Years Employed at Present Occupation[1]

YEARS EMPLOYED AT PRESENT OCCUPATION	All Hospitals		Types of Hospitals											
			General Short Term Non Profit		General Short Term - City		General Short Term - Federal		Special Short Term Non Profit		Special Long Term Non Profit		Special Long Term - State	
	EKG	EEG	EKG	EEG	EKG	EEG	EKG	EEG	EKG	EEG	EKG	EEG	EKG	EEG
Less than 1 year	18.8	20.0	28.6		33.3	100.0								
1 to 3 years	25.0	50.0	28.6	75.0	33.3		50.0	100.0						
4 to 6 years	18.8	20.0	14.3						100.0	100.0				
7 to 9 years		10.0		25.0										
10 to 14 years	12.5		28.6											
15 years and over	25.0				33.3		50.0						100.0	
Total Number of Personnel	16	10	7	4	3	2	2	2	2	2			2	0

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[1] May not add to 100 percent because of rounding.

Table No. 85 Percentage Distribution of Inhalation Therapists In Various Types of Hospitals
By Number of Years Employed at Present Occupation[1]

YEARS EMPLOYED AT PRESENT OCCUPATION	All Hospitals	Types of Hospitals					
		General Short Term Non Profit	General Short Term - City	General Short Term - Federal	Special Short Term Non Profit	Special Long Term Non Profit	Special Long Term - State
Less than 1 year	11.8	10.0	0	33.3	0		
1 to 3 years	35.3	50.0	0	0	100.0		
4 to 6 years	29.4	30.0	33.3	33.3	0		
7 to 9 years	11.8	10.0	33.3	0	0		
10 to 14 years	5.9	0	0	33.3	0		
15 years and over	5.9	0	33.3	0	0		
Total Number of Personnel	17	10	3	3	1		

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[1] May not add to 100 percent because of rounding.

Table No. 86 Percentage Distribution of Radiation Therapists in Various Types of Hospital by Last Year of School Completed and Degree Obtained

LAST YEAR OF SCHOOL COMPLETED	All Hospitals	Types of Hospitals					
		General Short Term Non Profit	General Short Term - City	General Short Term - Federal	Special Short Term Non Profit	Special Long Term Non Profit	Special Long Term - State
Elementary:							
8 years or less							
High School:							
1 - 3 years							
4 years	91.7	75.0	100.0	100.0	100.0		100.0
High School: Diploma	100.0	100.0	100.0	100.0	100.0		100.0
College:							
2 years of less	8.3	25.0					
3 years							
4 years							
5 or more years							
Associate Degree							
Bachelors Degree							
Master of Arts Degree							
Other Degree							

Table No. 87 Percentage Distribution of Radiologic Technicians in Various Types of Hospitals by Last Year of School Completed and Degree Obtained

LAST YEAR OF SCHOOL COMPLETED	All Hospitals	Types of Hospitals					
		General Short Term Non Profit	General Short Term - City	General Short Term - Federal	Special Short Term Non Profit	Special Long Term Non Profit	Special Long Term - State
Elementary:							
8 years or less							
High School:							
1 - 3 years							
4 years	87.9	92.8	66.7	100.0	100.0	50.0	100.0
High School: Diploma	100.0	100.0	100.0	100.0	100.0	100.0	100.0
College:							
2 years of less	12.1	7.2	33.3			50.0	
3 years							
4 years							
5 or more years							
Associate Degree							
Bachelors Degree							
Master of Arts Degree							
Other Degree							

Table No. 88 Percentage Distribution of X-Ray Developing Machine Operators In Various Types of Hospitals by Last Year of School Completed and Degree Obtained

LAST YEAR OF SCHOOL COMPLETED	All Hospitals	Types [illegible] Hospitals					
		General Short Term Non Profit	General Short Term - City	General Short Term - Federal	Special Short Term Non Profit	Special Long Term Non Profit	Special Long Term - State
Elementary:							
8 years or less	11.1	20.0					
High School:							
1 - 3 years	22.2	40.0					
4 years	55.5	40.0	100.0		100.0		
High School: Diploma	55.5	40.0	100.0		100.0		
College:							
2 years of less							
3 years							
4 years	11.1			100.0			
5 or more years							
Associate Degree							
Bachelors Degree	11.1			100.0			
Master of Arts Degree							
Other Degree							

Table No. 89 Percentage Distribution of EKG and EEG Technicians in Various Types of Hospitals by Last Year of School Completed and Degree Obtained

LAST YEAR OF SCHOOL COMPLETED	All Hospital		Types of Hospitals											
			General Short Term Non Profit		General Short Term - City		General Short Term - Federal		Special Short Term Non Profit		Special Long Term Non Profit		Special Long Term - State	
	EKG	EEG	EKG	EEG	EKG	EEG	EKG	EEG	EKG	EEG	EKG	EEG	EKG	EEG
Elementary: 8 years or less														
High School: 1 - 3 years		10.0		25.0										
4 years	25.0	50.0	28.6	25.0	33.3	100.0	50.0	100.0						
High School: Diploma	68.8	90.0	85.8	75.0	66.7	100.0	50.0	100.0	50.0	100.0			50.0	
College: 2 years or less	43.8	30.0	57.1	25.0					100.0	100.0			50.0	
3 years	6.3	10.0		25.0	33.3									
4 years	25.0		14.3		33.3		50.0						50.0	
5 or more years														
Associate Degree	6.3								50.0					
Bachelors Degree	25.0		14.3		33.3		50.0						50.0	
Master of Arts Degree														
Other Degree														

Table No. 90 Percentage Distribution of Inhalation Therapists in Various Types of Hospitals by Last Year of School Completed and Degree Obtained

LAST YEAR OF SCHOOL COMPLETED	All Hospitals	Types of Hospitals					
		General Short Term Non Profit	General Short Term - City	General Short Term - Federal	Special Short Term Non Profit	Special Long Term Non Profit	Special Long Term - State
Elementary: 8 years or less							
High School: 1 - 3 years	17.6	20.0	33.3				
4 years	35.3	50.0	33.3				
High School: Diploma	82.3	100.0	33.3	100.0			
College: 2 years of less	35.3	30.0		100.0			
3 years							
4 years	5.9				100.0		
5 or more years	5.9		33.3				
Associate Degree							
Bachelors Degree	5.9				100.0		
Master of Arts Degree	5.9		33.3				
Other Degree							

Table No. 91 Percentage Distribution of Radiation Therapists In Various Types of Hospitals by Occupational Level Which They May Hope To Attain

OCCUPATIONAL LEVEL	All Hospitals	Types of Hospitals					
		General Short Term Non Profit	General Short Term - City	General Short Term - Federal	Special Short Term Non Profit	Special Long Term Non Profit	Special Long Term - State
Present	41.7	100.0		33.3			
Supervisor of Department	41.7		66.7	33.3	100.0		100.0
Nuclear Machine	8.3		33.3				
Other	8.3			33.3			

Table No. 92 Percentage Distribution of Radiation Technicians in Various Types of Hospitals
By Occupational Level Which They May Hope to Attain

OCCUPATIONAL LEVEL	All Hospitals	Types of Hospitals					
		General Short Term Non Profit	General Short Term - City	General Short Term - Federal	Special Short Term Non Profit	Special Long Term Non Profit	Special Long Term - State
Present	27.2	28.6		50.0		100.0	
Supervisor of Department	57.6	57.1	100.0	33.3	50.0		66.7
Other	30.3	28.6	16.7	16.7	50.0		100.0

Table No. 93 Percentage Distribution of X-Ray Developing Machine Operator in Various Types of Hospitals by Occupational Level Which They May Hope to Attain

OCCUPATIONAL LEVEL	All Hospitals	Types of Hospitals					
		General Short Term Non Profit	General Short Term - City	General Short Term - Federal	Special Short Term Non Profit	Special Long Term Non Profit	Special Long Term - State
Present	88.9	100.0	100.0		100.0		
Reading X-Rays	11.1			100.0			

Table No. 94 Percentage Distribution of EKG and EEG Technicians In Various Types of Hospitals by Occupational Level Which They May Hope To Attain

OCCUPATIONAL LEVEL	All Hospitals		Types of Hospitals											
			General Short Term Non Profit		General Short Term - City		General Short Term - Federal		Special Short Term Non Profit		Special Long Term Non Profit		Special Long Term - State	
	EKG	EEG	EKG	EEG	EKG	EEG	EKG	EEG	EKG	EEG	EKG	EEG	EKG	EEG
Present	37.5	50.0	28.6	50.0	66.7	50.0		50.0	50.0	50.0			50.0	
Supervisor of Department	37.5	20.0	57.1	25.0					50.0	50.0			50.0	
Other	25.0	30.0	14.3	25.0	33.3	50.0	100.0	50.0						

Table No. 95 Percentage Distribution of Inhalation Therapists In Various Types of Hospitals by Occupational Level Which They May Hope To Attain

OCCUPATIONAL LEVEL	All Hospitals	Types of Hospitals					
		General Short Term Non Profit	General Short Term - City	General Short Term - Federal	Special Short Term Non Profit	Special Long Term Non Profit	Special Long Term - State
Present	52.9	40.0	100.0	66.7			
Supervisor of Department	41.3	50.0		33.3	100.0		
Other	5.8	10.0					

Table No. 96 Extent to Which Educational Background Prepared Radiation Therapists For The Functions Presently Performed[1]

OCCUPATIONAL BACKGROUND	All Hospitals	Types of Hospitals					
		General Short Term Non Profit	General Short Term - City	General Short Term -Federal	Special Short Term Non Profit	Special Long Term Non Profit	Special Long Term - State
High School	16.3	10.0	26.7	23.3			10.0
College	8.4	12.5		13.3			
Professional Training	28.4	23.7	33.3	16.7			75.0
On-the-Job Training	32.6	41.3	40.0	6.7			15.0
Work Experience	14.3	12.5		40.0			
Other							

[1] May not add to 100 percent because of rounding

Table No. 97 Extent to Which Educational Background Prepared Radiological Technicians For The Functions Presently Performed[1]

OCCUPATIONAL BACKGROUND	All Hospitals	Types of Hospitals					
		General Short Term Non Profit	General Short Term - City	General Short Term - Federal	Special Short Term Non Profit	Special Long Term Non Profit	Special Long Term - State
High School	5.5	5.6	4.2	4.2		5.0	15.0
College	11.0	15.1	9.2		6.0	17.5	16.7
Professional Training	30.3	34.9	10.0	43.3	41.5	17.5	25.0
On-the-Job Training	29.7	26.2	38.3	12.5	52.5	35.0	43.3
Work Experience	23.5	18.2	38.3	40.0		25.0	
Other							

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[1] May not add to 100 percent because of rounding

Table No. 98 Extent to Which Educational Background Prepared X-Ray Developing Machine Operators For The Functions Presently Performed[1]

OCCUPATIONAL BACKGROUND	All Hospitals	Types of Hospitals					
		General Short Term Non Profit	General Short Term - City	General Short Term - Federal	Special Short Term Non Profit	Special Long Term Non Profit	Special Long Term - State
High School	11.3	5.0	25.0		20.0		
College	6.3			50.0			
Professional Training	1.5		6.2				
On-the-Job Training	46.5	45.0	31.3	50.0	80.0		
Work Experience	34.4	50.0	37.5				
Other							

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[1] May not add to 100 percent because of rounding

Table No. 99 Extent to Which Educational Background Prepared EKG and EEG Technicians For The Functions Presently Performed[1/]

OCCUPATIONAL BACKGROUND	All Hospital		Types of Hospitals											
			General Short Term Non Profit		General Short Term - City		General Short Term - Federal		Special Short Term Non Profit		Special Long Term Non Profit		Special Long Term - State	
	EKG	EEG	EKG	EEG	EKG	EEG	EKG	EEG	EKG	EEG	EKG	EEG	EKG	EEG
High School	4.0	13.5		13.7		30.0	5.0			10.0			25.0	
College	8.0	3.0	7.2	7.5	20.0		5.0		25.0				25.0	
Professional Training	13.7	33.5	4.3	38.8	1.7	20.0	65.0	20.0		50.0			20.0	
On-the-Job Training	58.7	35.0	65.8	40.0	78.3	40.0		15.0	62.5	40.0			30.0	
Work Experience	15.6	15.0	22.7			10.0	25.0	65.0	12.5					
Other														

[1/] May not add to 100 percent because of rounding

Table No. 100 Extent to Which Educational Background Prepared Inhalation Therapists

For the Functions Presently Performed[1/]

OCCUPATIONAL BACKGROUND	All Hospitals	Types of Hospitals					
		General Short Term Non Profit	General Short Term - City	General Short Term - Federal	Special Short Term Non Profit	Special Long Term Non Profit	Special Long Term - State
High School	10.0	14.0	10.0				
College	2.4	3.0		3.3			
Professional Training	27.6	24.5	16.7	41.7	50.0		
On-the-Job Training	35.6	34.5	40.0	30.0	50.0		
Work Experience	24.4	24.0	33.3	25.0			
Other							

[1/] May not add to 100 percent because of rounding

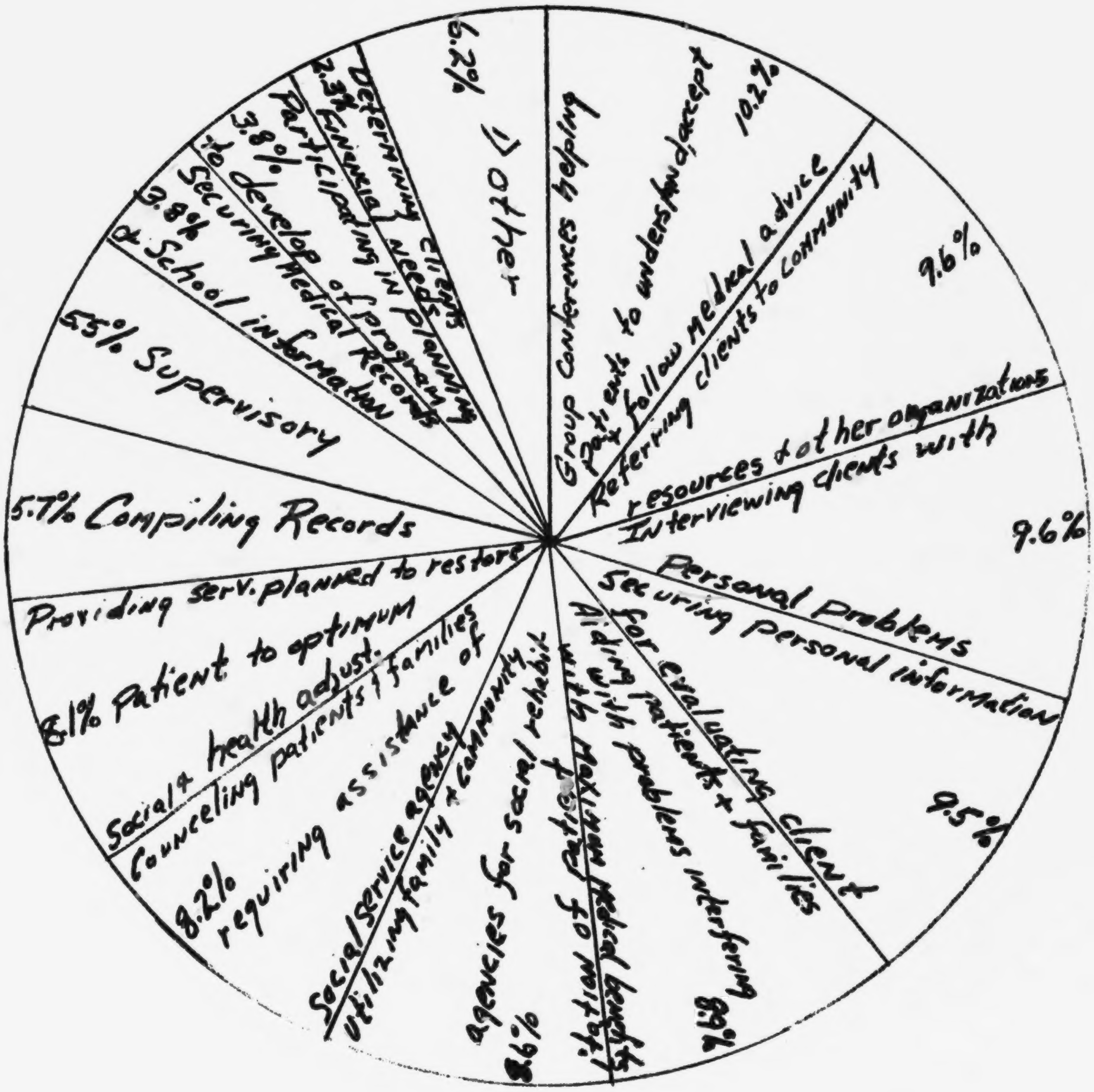
Table No. 101 Percentage of Total Working Time of Medical Social Workers and Aides Spent on Various Functions by Types of Hospitals

FUNCTIONS	All Hospitals		Types of Hospitals											
			General Short Term Non Profit		General Short Term - City		General Short Term Federal		Special Short Term Non Profit		Special Long Term Non Profit		Special Long Term - State	
	S.W.	Aides	S.W.	Aides	S.W.	Aides	S.W.	Aides	S.W.	Aides	S.W.	Aides	S.W.	Aides
1. Securing supplementary information such as employment, medical records or school reports	3.8	6.5	3.7	6.5	0.3	NONE	1.5	NONE	8.7	NONE	2.5	NONE	4.2	NONE
2. Compiling records	5.7	6.0	8.3	6.0	0.3		0		6.7		2.5		10.2	
3. Securing information such as physical, psychological, and social factors contributing to clients' situation and evaluating these and clients capacities	9.5	10.3	10.5	10.3	8.3		1.5		13.7		13.5		8.5	
4. Determining clients' eligibility for financial assistance	2.3	5.5	1.8	5.5	11.7		1.5		1.0		0.5		0.8	
5. Utilizing resources such as family and community or to learn to live within his disability	8.6	7.3	4.8	7.3	13.3		9.0		11.3		4.7		13.8	
6. Providing service planned to restore patient to optimum social and health adjustment in his capacity	8.1	7.0	6.7	7.0	13.3		8.0		5.5		14.5		5.7	
7. Helping patient and his family through individual or group conferences to understand, accept and follow medical recommendation	10.2	6.8	9.4	6.8	15.0		8.0		10.0		16.7		5.8	
8. Aiding patients and their families with personal and environmental difficulties which predispose illness or interfere with obtaining maximum benefits from medical care	8.9	5.0	10.3	5.0	1.7		8.0		9.7		15.5		5.3	
9. Referring clients to community resources and other organizations	9.6	9.0	13.9	9.0	6.0		9.0		13.2		3.0		8.5	
10. Interviewing client with problems such as personal and family adjustments, finances, employment and physical and mental improvements to determine nature and degree of problem	9.6	15.8	8.8	15.8	12.3		9.0		7.0		16.7		6.8	
11. Counseling and aiding individuals and families requiring assistance of social service agency	8.2	5.0	8.8	5.0	10.3		8.0		11.5		3.0		7.2	
12. Participating in planning for improving health service by interpreting social factors pertinent to development of program	3.8	3.8	3.7	3.8	0		9.0		2.2		3.2		8.5	
13. Research	0.2	0	0.3	0	0		2.0		0		0		0	
14. Teaching	1.7	0	0.5	0	0		0		0		1.2		5.2	
15. Supervisory	5.5	0.3	4.5	0.3	8.3		25.0		0		1.2		5.8	
16. Other	4.9	10.8	4.5	10.8	0		2.5		0		0		15.3	
Total Number of Persons	26	7	9	7	3	0	2	0	3	0	4	0	6	0

Table No. 102 Percentage of Medical Social Workers and Aides Performing Various Functions by Types of Hospitals

F U N C T I O N S	All Hospitals		Types of Hospitals											
			General Short Term Non Profit		General Short Term - City		General Short Term Federal		Special Short Term Non Profit		Special Long Term Non Profit		Special Long Term - State	
	S.W.	Aides	S.W.	Aides	S.W.	Aides	S.W.	Aides	S.W.	Aides	S.W.	Aides	S.W.	Aides
1. Securing supplementary information such as employment, medical records or school reports	76.7	50.0	90.9	50.0	33.3	NONE	50.0	NONE	75.0	NONE	50.0	NONE	100.0	None
2. Compiling records	63.3	75.0	72.7	75.0	33.3		0		50.0		50.0		100.0	
3. Securing information such as physical, psychological, and social factors contributing to clients' situation and evaluating these and clients' capacities	90.0	100.0	90.9	100.0	33.3		50.0		100.0		100.0		100.0	
4. Determining clients' eligibility for financial assistance	36.7	75.0	36.4	75.0	33.3		50.0		25.0		25.0		50.0	
5. Utilizing resources such as family and community agencies to assist patients to resume life in community or to learn to live within his disability	96.7	100.0	100.0	100.0	100.0		100.0		75.0		100.0		100.0	
6. Providing service planned to restore patient to optimum social and health adjustment in his capacity	96.7	75.0	90.9	75.0	100.0		100.0		100.0		100.0		100.0	
7. Helping patient and his family through individual or group conferences to understand, accept and follow medical recommendation	100.0	75.0	100.0	75.0	100.0		100.0		100.0		100.0		100.0	
8. Aiding patients and their families with personal and environmental difficulties with predispose illness or interfere with obtaining maximum benefits from medical care	86.7	50.0	90.9	50.0	33.3		100.0		100.0		100.0		83.3	
9. Referring clients to community resources and other organizations	967	100.0	100.0	100.0	100.0		100.0		100.0		75.0		100.0	
10. Interviewing client with problems such as personal and family adjustments, finances, employment and physical and mental improvements to determine nature and degree of problem	967	75.0	100.0	75.0	100.0		100.0		75.0		100.0		100.0	
11. Counseling and aiding individuals and families requiring assistance of social service agency	93.3	75.0	90.9	75.0	100.0		100.0		100.0		75.0		100.0	
12. Participating in planning for improving health service by interpreting social factors pertinent to development of program	63.3	50.0	72.7	50.0	0		100.0		50.0		50.0		83.3	
13. Research	10.0	0	18.1	0	0		50.0		0		0		0	
14. Teaching	20.0	0	18.1	0	0		0		0		25.0		50.0	
15. Supervisory	26.7	25.0	18.1	25.0	66.7		50.0		0		25.0		33.3	
16. Other	23.3	25.0	27.3	25.0	0		50.0		0		0		50.0	
Total number of persons	26	7	9	7	3	-	2	0	3	0	4	0	6	0

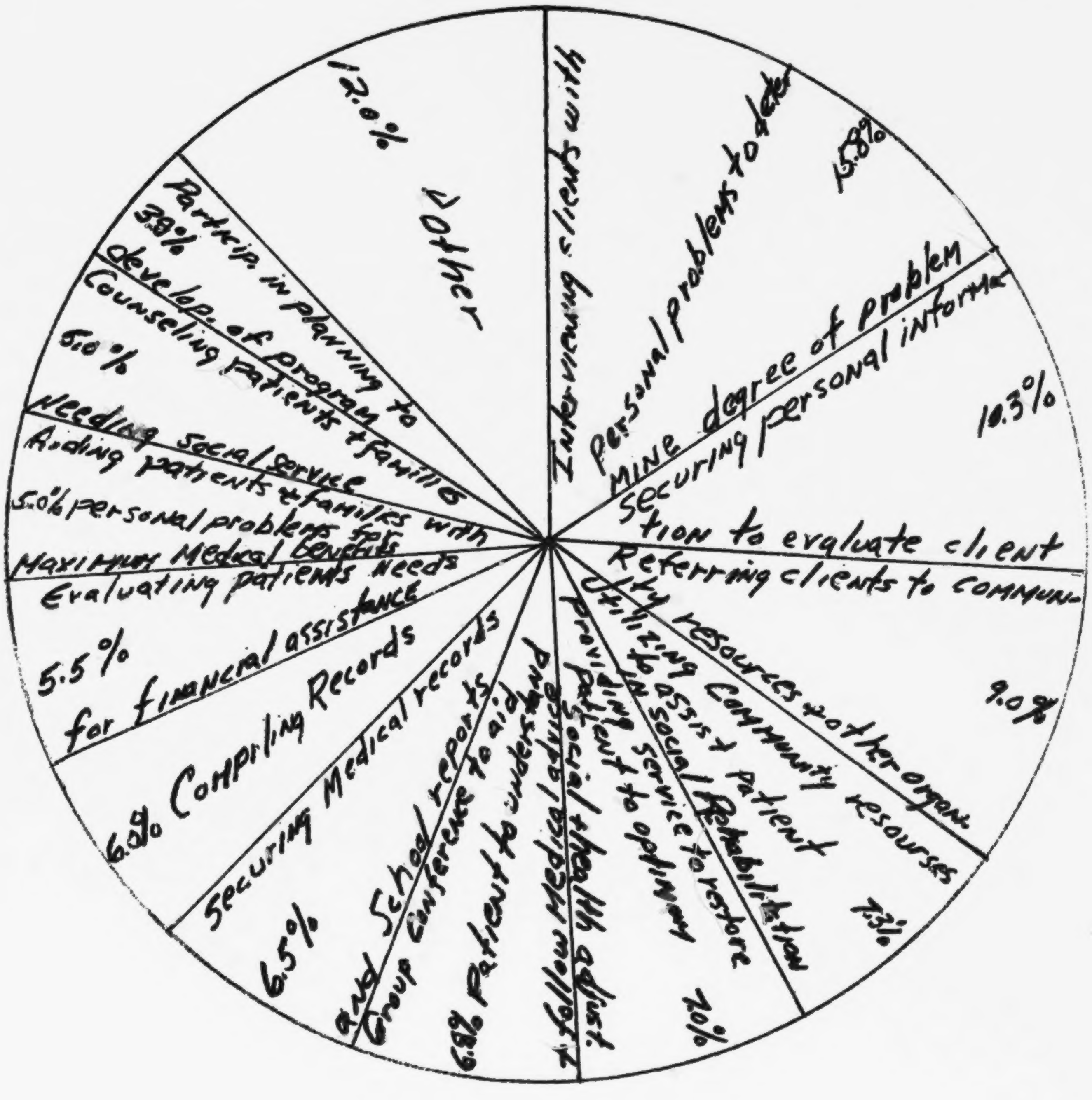
Figure No. 26   MEDICAL SOCIAL WORKERS



1/ Other:
13. Research
14. Teaching
16. Other

④

Figure No. 27 MEDICAL SOCIAL WORKER'S AIDES



1/ Other: 15. Supervisory
16. Other

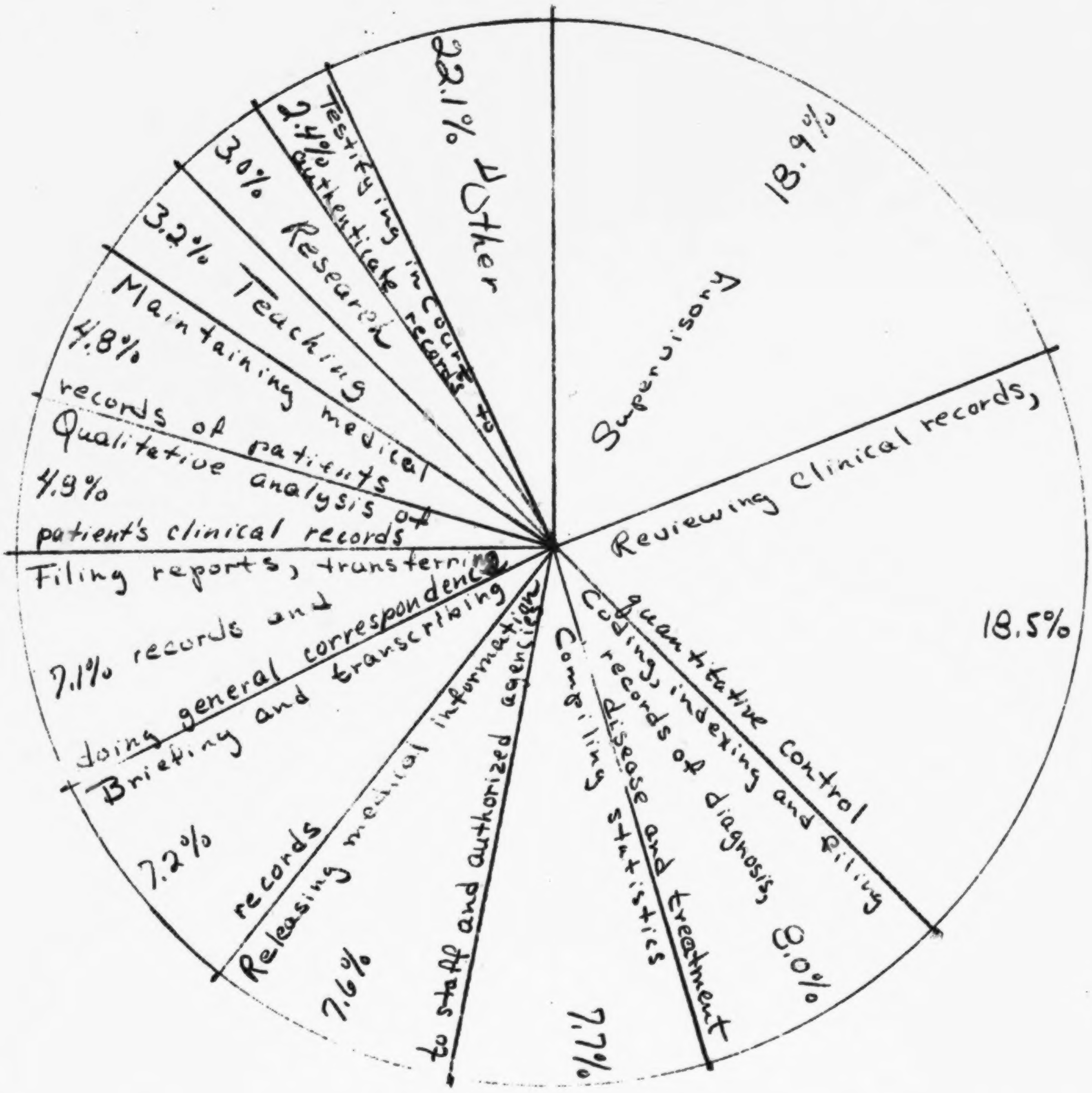
Table No. 103 Percentage of Total Working Time of Medical Record Personnel Spent on Various Functions by Types of Hospitals

FUNCTIONS	All Hospitals	Types of Hospitals					
		General Short Term Non Profit	General Short Term - City	General Short Term - Federal	Special Short Term Non Profit	Special Long Term Non Profit	Special Long Term - State
	Percent	Percent	Percent	Percent	Percent	Percent	Percent
1. Briefing and transcribing records	7.3	1.4	15.2	----	12.7	20.0	----
2. Filing of operation reports, lab. chits, transferring records and doing general correspondence	7.2	1.5	18.6	4.0	15.3	4.3	5.0
3. Filing of taped reports	.9	.2	.4	1.0	5.3	----	----
4. Maintaining medical records of patients	4.8	5.2	6.2	2.7	5.7	2.7	4.0
5. Reviewing clinical records for completeness and contacting medical personnel to obtain missing data, quantitative control	18.5	18.6	15.4	47.3	7.3	9.3	8.0
6. Compiling statistics such as reports on admissions, births, deaths, transfers, and discharges	7.7	11.7	2.4	8.0	5.7	1.0	8.0
7. Testifying in court to authenticate records	2.5	2.8	1.0	----	5.3	4.0	----
8. Coding, indexing and filing records of diagnosis, disease, and treatment	8.0	8.7	2.6	10.7	10.0	10.7	5.0
9. Releasing medical information to staff and authorized governmental agencies, insurance companies, physicians hospitals, and research centers	7.6	7.7	6.2	7.3	10.0	8.7	5.0
10. Qualitative analysis of patient's clinical records	4.9	3.9	2.2	6.7	3.3	12.7	5.0
11. Research	3.1	2.8	3.6	2.0	8.0	----	----
12. Teaching	3.3	3.5	3.0	1.7	8.9	----	----
13. Supervisory	19.0	22.7	20.0	6.0	3.3	18.3	60.0
14. Other	5.2	8.7	1.0	3.0	----	8.3	----
15. Suspension List	.3	----	1.0	----	----	----	----
16. Correspondence	.3	----	1.0	----	----	----	----
17. Interdepartment Relationships - Doctors	.3	----	1.0	----	----	----	----
18. Staff Meetings	.3	.5	----	----	----	----	----
Total Numbers of Persons	26	11	5	3	3	3	1

Table No. 104 Percentage of Medical Record Personnel Performing Various Functions, By Types of Hospitals

FUNCTIONS	All Hospitals	Types of Hospitals					
		General Short Term Non Profit	General Short Term - City	General Short Term - Federal	Special Short Term Non Profit	Special Long Term Non Profit	Special Long Term - State
	Percent	Percent	Percent	Percent	Percent	Percent	Percent
1. Briefing and transcribing records	42.3	18.0	80.0	33.3	100.0	33.3	0
2. Filing of operation reports, lab. chits, transferring records and doing general correspondence	50.0	27.2	60.0	33.3	100.0	66.7	100.0
3. Filing of taped reports	26.9	9.0	20.0	100.0	66.7	----	0
4. Maintaining medical records of patients	76.9	63.6	100.0	66.7	100.0	66.7	100.0
5. Reviewing clinical records for completeness and contacting medical personnel to obtain mission data, quantitative control	84.6	81.8	100.0	66.7	100.0	66.7	100.0
6. Compiling statistics such as reports on admissions, births, deaths, transfers, and discharges	65.4	72.7	60.0	----	100.0	66.7	100.0
7. Testifying in court to authenticate records	38.5	27.2	20.0	66.7	66.7	66.7	0
8. Coding, indexing and filing records of diagnosis, disease, and treatment	73.1	63.6	60.0	100.0	100.0	66.7	100.0
9. Releasing medical information to **staff and authorized** governmental agencies, insurance companies, physicians hospitals, and research centers	80.8	72.7	80.0	66.7	100.0	100.0	100.0
10. Qualitative analysis of patient's clinical records	46.2	36.2	40.0	66.7	66.7	33.3	100.0
11. Research	46.2	36.4	60.0	66.7	100.0	----	0
12. Teaching	42.3	45.5	40.0	66.7	66.7	----	0
13. Supervisory	73.1	81.8	80.0	33.3	66.7	66.7	100.0
14. Other	34.5	45.5	40.0	----	----	66.7	0
15. Suspension List	3.8	----	20.0	----	----	----	0
16. Correspondence	3.8	----	20.0	----	----	----	0
17. Interdepartment Relationships - Doctors	3.8	----	20.0	----	----	----	0
18. Staff Meetings	3.8	9.0	----	----	----	----	0
Total Number of Persons	26	11	5	3	3	3	1

Figure No. 28 MEDICAL RECORDS PERSONNEL



[1] Other:
3. Filing of taped reports
15. Suspension List
16. Correspondence
14. Other
17. Interdepartment Relationships--Doctors
18. Staff Meetings

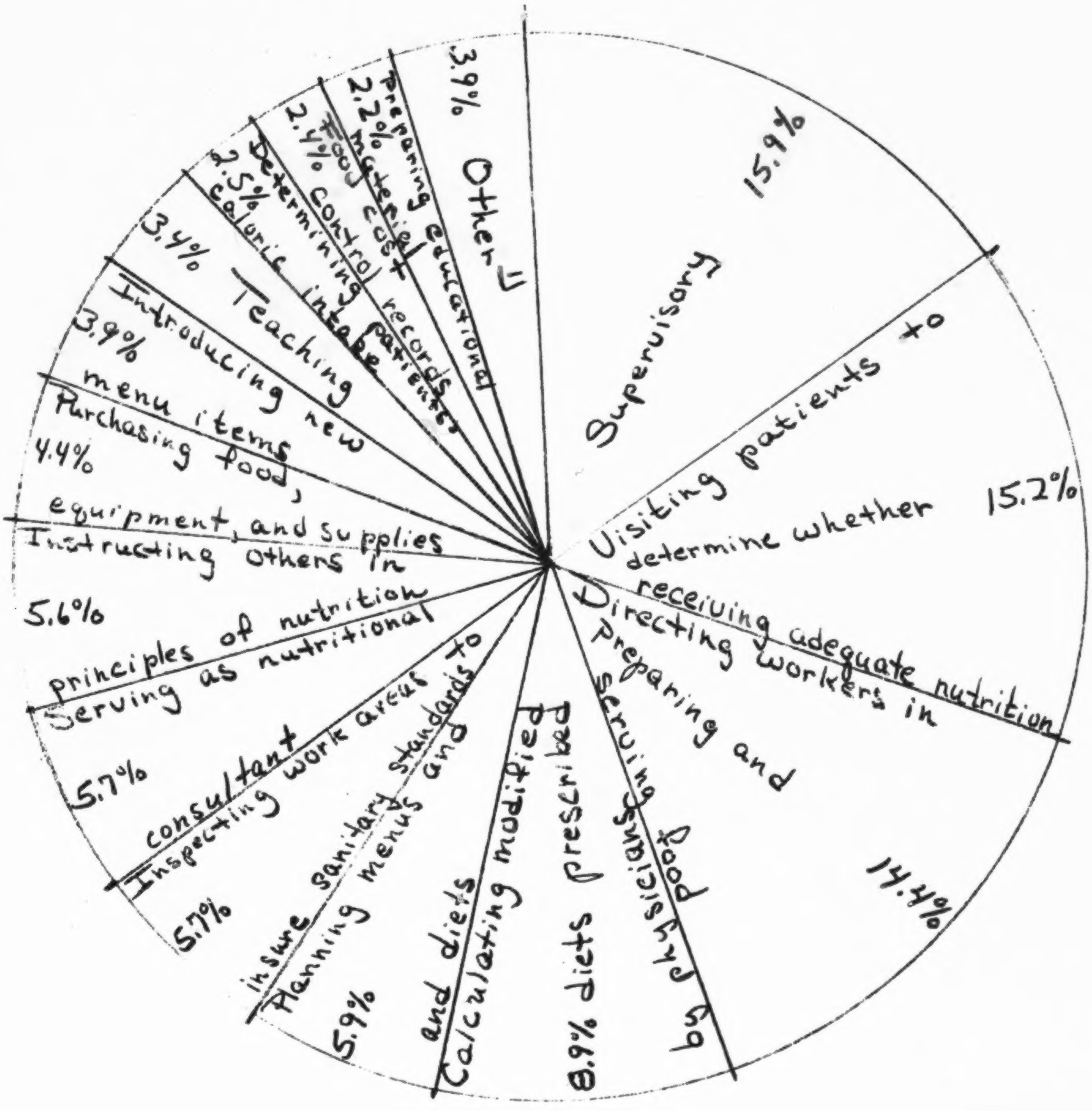
Table No. 105 Percentage of Total Working Time of Dietitions And Dietition's Aides Spent On Various Functions by Types of Hospitals

FUNCTIONS	All Hospitals		Types of Hospitals											
			General Short Term Non Profit		General Short Term - City		General Short Term Federal		Special Short Term Non Profit		Special Long Term Non Profit		Special Long Term - State	
	Diet	Aide	Diet	Aide	Diet	Aide	Diet	Aide	Diet	Aide	Diet	Aide	Diet	Aide
1. Cleaning kitchen area and cafeteria	0	12.7	0	10.4	0	NONE	0	25.5	0	0	0	35.0	0	5.0
2. Setting up cafeteria for staff	0.2	5.8	0	3.9	1.7		0	3.0	0	0	0	35.0	0	0.2
3. Preparing baskets of food for distribution to patients on the floor	1.7	14.7	2.6	8.4	2.3		0	19.0	0	80.0	0	15.0	0	14.0
4. Purchasing or requisitioning food, equipment and supplies	4.4	3.5	4.7	4.5	6.7		0.7	0	2.0	5.0	3.3	0	10.0	4.0
5. Introducing new menu items and studying their acceptability	3.9	2.1	4.7	3.2	6.3		1.3	0	5.0	0	2.0	0	2.0	2.4
6. Directing workers engaged in the preparation and serving of food	14.4	18.5	14.8	21.7	6.7		5.0	13.0	8.0	0	46.3	2.5	2.0	24.0
7. Inspecting work area and storage facilities to insure observance of sanitary standards	5.7	7.8	5.1	3.6	5.3		4.3	0	15.0	0	5.3	2.5	10.0	24.0
8. Visiting patients to determine whether they are receiving adequate nutrition	15.2	9.7	16.9	14.3	3.3		28.3	13.0	37.0	0	4.3	0	1.0	4.0
9. Instructing individuals or groups in application of principles of nutrition in selection of food	5.6	1.7	7.9	0	3.3		7.7	10.0	0	0	1.0	0	1.0	2.0
10. Preparing educational material on nutritional value of foods and methods of preparation	2.2	0.4	1.8	0	0.7		3.3	0	0	0	2.3	0	1.0	2.0
11. Serving as nutritional consultant to physicians, nurses and patients	5.7	0.8	3.8	0.6	6.7		10.3	0	6.0	0	1.3	0	25.0	2.0
12. Calculating modified diets as prescribed by physicians	8.9	2.8	7.9	0	9.3		6.0	0	10.0	0	1.7	0	50.0	12.0
13. Planning menus and diets providing required food and nutrients to feed individuals or groups	5.9	1.0	4.9	0	7.7		3.7	0	2.0	0	13.7	0	1.0	4.0
14. Determining caloric intake for patients	2.5	2.0	2.3	2.9	5.7		2.0	0	5.0	0	0.7	4.9	1.0	0
15. Going on medical rounds with physicians	0.9	0	1.1	0	0		2.3	0	0	0	0.3	0	1.0	0
16. Maintaining and analyzing food cost control records to determine improved methods for purchasing and utilization of food, equipment and supplies	2.4	0	3.1	0	3.3		1.7	0	0	0	1.0	0	0	0
17. Collecting menus from floors	0	1.9	0	3.8	0		0	0	0	0	0	0	0	0
18. Tallying menu sheets	0	2.0	0	3.8	0		0	0	0	0	0	0	0	0
19. Check and mark menus	0	0.2	0	0.4	0		0	0	0	0	0	0	0	0
20. Collect diets from patients	0	1.2	0	2.4	0		0	0	0	0	0	0	0	0
21. Office work	0	2.9	0	5.6	0		0	0	0	0	0	0	0	0
22. Distributing trays to patients	0	3.8	0	6.0	0		0	0	0	15.0	0	0	0	0
23. Research	0.6	0	0.1	0	0.3		3.3	0	0	0	0	0	0	0
24. Teaching	3.4	0.4	5.3	1.0	0		2.3	0	0	0	2.3	0	0	0
25. Supervisory	15.9	4.2	13.8	5.1	29.0		17.0	11.0	12.0	0	16.3	5.0	0	0
26. Other	0.5	0	0	0	4.0		0	0	0	0	0	0	0	0
Total Number of Persons	23	21	12	11	3	0	3	2	1	1	3	2	1	5

Table No. 106 Percentage of Dietitions and Dietition's Aides Performing Various Functions by Types of Hospitals

FUNCTIONS	All Hospitals		Types of Hospitals: General Short Term Non Profit		General Short Term - City		General Short Term Federal		Special Short Term Non Profit		Special Long Term Non Profit		Special Long Term - State	
	Diet	Aide	Diet	Aide	Diet	Aide	Diet	Aide	Diet	Aide	Diet	Aide	Diet	Aide
1. Cleaning kitchen area and cafeteria	4.3	61.9	0	27.3	33.3	NONE	0	100.0	0	0	0	100.0	0	20.0
2. Setting up cafeteria for staff	4.3	28.6	0	18.2	33.3		0	50.0	0	100.0	0	100.0	0	20.0
3. Preparing baskets of food for distribution to patients on the floor	13.0	38.1	16.7	36.7	33.3		0	50.0	0	100.0	0	50.0	0	20.0
4. Purchasing or requisitioning food, equipment and supplies	56.5	38.1	41.7	45.4	100.0		33.3	0	0	100.0	66.7	0	100.0	40.0
5. Introducing new menu items and studying their acceptability	86.9	14.3	75.0	18.2	100.0		100.0	0	100.0	0	100.0	0	100.0	20.0
6. Directing workers engaged in the preparation and serving of food	82.6	71.4	75.0	81.8	100.0		66.7	50.0	100.0	0	100.0	50.0	100.0	80.0
7. Inspecting work area and storage facilities to insure observance of sanitary standards	91.3	38.1	91.7	27.3	100.0		66.7	0	100.0	0	100.0	50.0	100.0	80.0
8. Visiting patients to determine whether they are receiving adequate nutrition	82.6	38.1	83.3	45.4	66.7		100.0	50.0	100.0	0	66.7	0	100.0	40.0
9. Instructing individuals or groups in application of principles of nutrition in selection of food	73.9	9.5	83.3	0	66.7		100.0	50.0	0	0	33.3	0	100.0	20.0
10. Preparing educational material on nutritional value of foods and methods of preparation	65.2	4.8	66.7	0	66.7		66.7	0	0	0	66.7	0	100.0	20.0
11. Serving as nutritional consultant to physicians, nurses and patients	86.9	14.3	83.3	18.2	100.0		100.0	0	100.0	0	66.7	0	100.0	20.0
12. Calculating modified diets as prescribed by physicians	86.9	9.5	83.3	0	100.0		100.0	0	100.0	0	66.7	0	100.0	40.0
13. Planning menus and diets providing required food and nutrients to feed individuals or groups	91.3	9.5	91.7	0	100.0		100.0	0	100.0	0	66.7	0	100.0	40.0
14. Determining caloric intake for patients	73.9	19.0	75.0	27.3	100.0		66.7	0	100.0	0	33.3	50.0	100.0	0
15. Going on medical rounds with physicians	39.1	0	33.3	0	0		100.0	0	0	0	33.3	0	100.0	0
16. Maintaining and analyzing food cost control records to determine improved methods for purchasing and utilization of food, equipment and supplies	34.8	0	33.3	0	66.7		33.3	0	0	0	33.3	0	0	0
17. Collecting menus from floors	0	9.5	0	18.2	0		0	0	0	0	0	0	0	0
18. Tallying menu sheets	0	9.5	0	18.2	0		0	0	0	0	0	0	0	0
19. Check and mark menu	0	4.8	0	9.1	0		0	0	0	0	0	0	0	0
20. Collect diets from patients	0	4.8	0	9.1	0		0	0	0	0	0	0	0	0
21. Office work	0	9.5	0	18.2	0		0	0	0	0	0	0	0	0
22. Distributing trays to patients	0	14.3	0	18.2	0		0	0	0	100.0	0	0	0	0
23. Research	21.7	0	16.7	0	33.3		66.7	0	0	0	0	0	0	0
24. Teaching	56.5	4.8	83.3	9.1	33.3		66.7	0	0	0	33.3	0	0	0
25. Supervisory	91.3	23.8	91.7	27.3	100.0		100.0	50.0	0	0	100.0	50.0	0	0
26. Other	4.3	0	0	0	33.3		0	0	100.0	0	0	0	0	0
Total Number of Persons	23	21	12	1	3	0	3	2	1	1	3	2	1	5

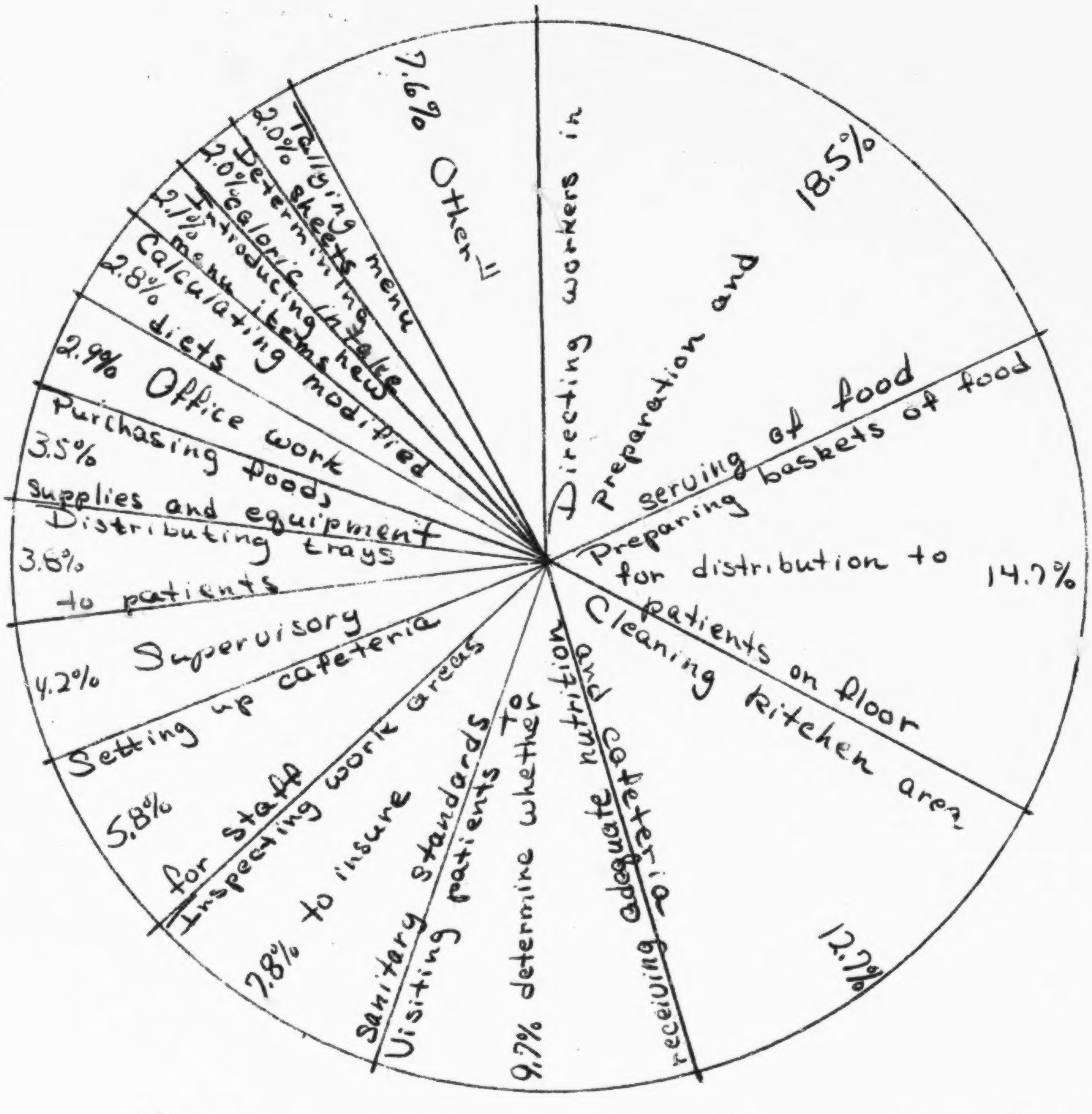
Figure No. 29 DIETITIANS



1/ Other:

2. Setting up cateteria for staff
3. Preparing baskets of food for distribution to patients on floors
15. Going on medical rounds with physicians
17. Research
20. Other

Figure No. 30 DIETITIAN'S AIDES



1/ Other:

9. Instructing individuals or groups in application of principles of nutrition in selection of food
10. Preparing educational material on nutritional value of foods and methods of preparation
11. Serving as nutritional consultant to physicians nurses and patients
13. Planning menus and diets providing required food and nutrients to feed individuals or groups
18. Teaching
21. Collecting menus from floors
23. Check and mark menus
24. Collect diets from patients

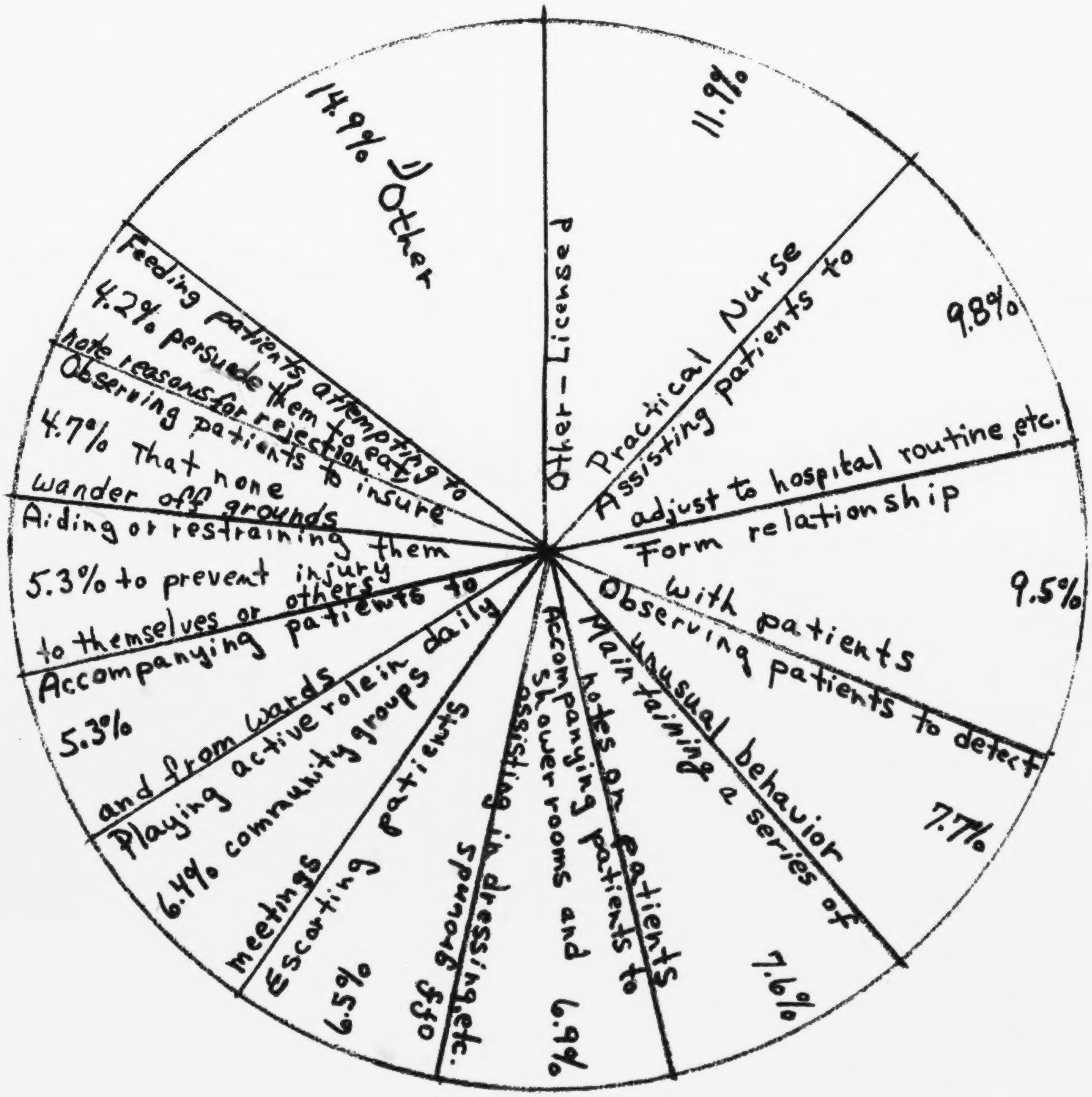
Table No. 107 Percentage of Total Working Time of Psychiatric Aides Spent on Various Functions, By Types of Hospitals

FUNCTIONS	All Hospitals	Types of Hospitals					
		General Short Term Non Profit	General Short Term - City	General Short Term - Federal	Special Short Term Non Profit	Special Long Term Non Profit	Special Long Term - State
	Percent	Percent	Percent	Percent	Percent	Percent	Percent
1. Accompanying patien s to and from wards for examinations and treatment	5.3	6.0	NONE	7.5	NONE	7.0	3.7
2. Accompanying patients to shower rooms and assist them in bathing, dressing, grooming	6.9	31.0		2.0		2.8	8.9
3. Aiding or restraining them to prevent injury to themselves or other patients	5.3	1.0		3.5		7.4	4.3
4. Assisting patients in becoming accustomed to hospital routine and encouraging them to participate in social and recreational activities	9.8	12.0		8.5		13.1	7.4
5. Observing patients to insure that none wander from the grounds	4.7	13.0		3.5		4.8	4.2
6. Observing patients to detect unusual behavior	7.7	13.0		9.0		10.0	5.4
7. Feeding patients or attempting to persuade them to eat, and noting reasons for rejection of food	4.2	13.0		2.0		2.0	5.5
8. Escorting patients off grounds for medical or dental treatment, or to library for selection of reading materials or to church services, motion pictures or athletic contests	6.5	13.0		15.5		10.1	1.8
9. Maintaining a series of notes on patients	7.6	0		17.0		9.9	4.9
10. Playing an active role in daily community groups meetings, conducted by physician	6.4	0		0		3.4	10.1
11. Conducting group therapy, as group leader	1.2	0		0		.6	1.8
12. Form relationship with patients	9.5	0		0		16.0	6.8
13. Errands	.9	0		0		2.4	0
14. "Cooking" - weekends and breakfast	.7	0		0		1.8	0
15. Research	.5	0		0		0	.9
16. Teaching	.1	0		.5		0	0
17. Supervisory	1.5	0		15.0		4.5	.1
18. Other	9.3	0		19.0		6.8	10.5
19. Other Licensed Practical Nurse	11.9	0		0		0	23.8
Total Number of Persons	26	1	0	2	0	10	13

Table No. 108 Percentage of Psychiatric Aides Performing Various Functions, By Types of Hospitals

FUNCTIONS	All Hospitals	Types of Hospitals					
		General Short Term Non Profit	General Short Term - City	General Short Term - Federal	Special Short Term Non Profit	Special Long Term Non Profit	Special Long Term - State
	Percent	Percent	Percent	Percent	Percent	Percent	Percent
1. Accompanying patients to and from wards for examinations and treatment	96.2	100.0	NONE	100.0	NONE	100.0	92.3
2. Accompanying patients to shower rooms and assist them in bathing, dressing, grooming	80.8	100.0		100.0		70.0	84.6
3. Aiding or restraining them to prevent injury to themselves or other patients	88.5	100.0		100.0		100.0	76.9
4. Assisting patients in becoming accustomed to hospital routine and encouraging them to participate in social and recreational activities	92.3	100.0		100.0		100.0	84.6
5. Observing patients to insure that none wander from grounds	92.3	100.0		100.0		90.0	92.3
6. Observing patients to detect unusual behavior	92.3	100.0		100.0		100.0	84.6
7. Feeding patients or attempting to persuade them to eat, and noting reasons for rejection of food	80.8	100.0		100.0		80.0	76.9
8. Escorting patients off grounds for medical or dental treatment, or to library for selection of reading materials or to church services, motion pictures or athletic contests	92.3	100.0		100.0		100.0	84.6
9. Maintaining a series of notes on patients	92.3	0		100.0		90.0	100.0
10. Playing an active role in daily community groups meetings, conducted by physician	76.9	0		0		80.0	92.3
11. Conducting group therapy, as group leader	23.1	0		0		20.0	30.7
12. Form relationship with patients	46.2	0		0		90.0	23.1
13. Errands	7.7	0		0		20.0	0
14. "Cooking" - weekends and breakfast	19.2	0		0		50.0	0
15. Research	3.8	0		0		0	7.7
16. Teaching	3.8	0		50.0		0	0
17. Supervisory	15.4	0		50.0		20.0	7.7
18. Other	57.7	0		100.0		50.0	61.5
19. Other Licensed Practical Nurse	23.1	0		0		0	46.1
Total Number of Persons	26	1	0	2	0	10	13

Figure No. 31 PSYCHIATRIC AIDES



[1] Other:

11. Conducting group therapy, as group leader
13. Errands
14. "Cooking" - weekends and breakfast
15. Research
16. Teaching
17. Supervisory
18. Other

Table No. 109 Percentage Distribution of Social Workers and Aides In Various Types of Hospitals By Number of Years Employed at Present Occupation[1]

YEARS EMPLOYED AT PRESENT OCCUPATION	All Hospitals		Types of Hospitals											
			General Short Term Non Profit		General Short Term - City		General Short Term - Federal		Special Short Term Non Profit		Special Long Term Non Profit		Special Long Term - State	
	S.W.	Aide	S.W.	Aide	S.W.	Aide	S.W.	Aide	S.W.	Aide	S.W.	Aide	S.W.	Aide
Less than 1 year	23.0	57.1	22.2	66.7					50.0		25.0		33.3	
1 to 3 years	7.7	42.9	22.2	33.3						100.0				
4 to 6 years	11.5		22.2		33.3									
7 to 9 years	7.7		11.1								25.0			
10 to 14 years	14.2		11.1								50.0		33.3	
15 years and over	30.7		11.1		66.7		100.0		50.0				33.3	
Total Number of Personnel	26	7	9	6	3	0	2	0	2	1	4	0	6	0

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[1] May not add to 100 percent because of rounding.

Table No. 110 Percentage Distribution of Medical Record Librarians and Technicians In Various Types of Hospitals by Number of Years Employed at Present Occupation[1/]

YEARS EMPLOYED AT PRESENT OCCUPATION	All Hospitals		Types of Hospitals											
			General Short Term Non Profit		General Short Term - City		General Short Term - Federal		Special Short Term Non Profit		Special Long Term Non Profit		Special Long Term - State	
	Libr	Tech	Libr	Tech	Libr	Tech	Libr	Tech	Libr	Tech	Libr	Tech	Libr	Tech
Less than 1 year		11.1										50.0		
1 to 3 years	11.8	11.1	25.0									50.0		
4 to 6 years	11.8	22.2		33.3			50.0			100.0	100.0			
7 to 9 years	11.8		12.5		33.3									
10 to 14 years	11.8	33.3		33.3		100.0			50.0				100.0	
15 years and over	53.1	22.2	62.5	33.3	66.7		50.0	100.0	50.0					
Total Number of Personnel	17	9	8	3	3	2	2	1	0	1	1	2	1	0

[1/] May not add to 100 percent because of rounding.

Table No. 111 Percentage Distribution of Dietitians and Dietitians Aides In Various Types of Hospitals by Number of Years Employed at Present Occupation[1/]

YEARS EMPLOYED AT PRESENT OCCUPATION	All Hospitals		Types of Hospitals											
			General Short Term Non Profit		General Short Term - City		General Short Term - Federal		Special Short Term Non Profit		Special Long Term Non Profit		Special Long Term - State	
	Diet	Aide	Diet	Aide	Diet	Aide	Diet	Aide	Diet	Aide	Diet	Aide	Diet	Aide
Less than 1 year	13.0	9.5	16.7	18.2			33.3							
1 to 3 years	21.7	9.5	25.0	9.1					100.0	100.0	33.3			
4 to 6 years	4.3	42.8	8.3	45.5				50.0				100.0		20.0
7 to 9 years	13.0		16.7								33.3			
10 to 14 years	13.0	33.3	16.7	27.3									100.0	80.0
15 years and over	34.7	4.8	16.7		100.0		66.7	50.0			33.3			
Total Number of Personnel	23	21	12	11	3	0	3	2	1	1	3	2	1	5

[1/] May not add to 100 percent because of rounding.

Table No. 112 Percentage Distribution of Psychiatric Aides In Various Types of Hospitals by Number of Years Employed at Present Occupations[1]

YEARS EMPLOYED AT PRESENT OCCUPATION	All Hospitals	Types of Hospitals					
		General Short Term Non Profit	General Short Term - City	General Short Term - Federal	Special Short Term Non Profit	Special Long Term Non Profit	Special Long Term - State
Less than 1 year	30.7	100.0		0		60.0	7.7
1 to 3 years	34.6	0		100.0		40.0	23.1
4 to 6 years							
7 to 9 years	7.7						15.4
10 to 14 years	3.8						7.7
15 years and over	23.0						46.1
Total Number of Personnel	26	1		2		10	13

1/ May not add to 100 percent because of rounding.

Table No. 113 Percentage Distribution of Social Workers and Aides in Various Types of Hospitals by Last Year of School Completed and Degree Obtained

LAST YEAR OF SCHOOL COMPLETED	All Hospital		Types of Hospitals											
			General Short Term Non Profit		General Short Term - City		General Short Term - Federal		Special Short Term Non Profit		Special Long Term Non Profit		Special Long Term - State	
	S.W.	Aide	S.W.	Aide	S.W.	Aide	S.W.	Aide	S.W.	Aide	S.W.	Aide	S.W.	Aide
Elementary: 8 years or less														
High School: 1 - 3 years														
4 years														
High School: Diploma		28.6		16.7						100.0				
College: 2 years or less	3.8	28.6	11.1	16.7						100.0				
3 years														
4 years	23.1	71.4	11.1	83.3	66.7						25.0		33.3	
5 or more years	73.2		77.7		33.3		100.0		100.0		75.0		66.7	
Associate Degree	3.8		11.1											
Bachelors Degree	23.1	71.4	11.1	83.3	66.7						25.0		33.3	
Master of Arts Degree	73.2		77.7		33.3		100.0		100.0		75.0		66.7	
Other Degree														

TABLE NO.114 Percentage Distribution of Medical Record Librarians and Technicians In Various Types of Hospitals by Last Year of School Completed and Degree Obtained

LAST YEAR OF SCHOOL COMPLETED	All Hospital		Types of Hospitals											
			General Short Term Non Profit		General Short Term - City		General Short Term - Federal		Special Short Term Non Profit		Special Long Term Non Profit		Special Long Term - State	
	Lib.	Tech.	Libr.	Tech.	Libr.	Tech.	Libr.	Tech.	Libr.	Tech.	Libr.	Tech.	Libr.	Tech
Elementary: 8 years or less														
High School: 1 - 3 years														
4 years	23.53	78.0	25.0	100.0	33.3	100.0		100.0		100.0	100.0			
High School: Diploma	23.53	78.0	25.0	100.0	33.3	100.0		100.0		100.0	100.0			0
College: 2 years or less	11.1		12.5										100.0	
3 years	5.6		12.5											
4 years	52.9	11.8	50.0		33.3		100.0		100.0			100.0		
5 or more years	5.6				33.3									
Associate Degree	5.6		12.5											
Bachelors Degree	52.9	11.8	50.0		66.7		50.0		100.0			100.0		0
Master of Arts Degree														
Other Degree	5.6						RN 50.0							

Table No. 115 Percentage Distribution of Dietitians and Dietary Aides in Various Types of Hospitals by Last Year of School Completed and Degree Obtained

LAST YEAR OF SCHOOL COMPLETED	All Hospital		Types of Hospitals											
			General Short Term Non Profit		General Short Term - City		General Short Term - Federal		Special Short Term Non Profit		Special Long Term Non Profit		Special Long Term - State	
	Diet	Aide	Diet	Aide	Diet	Aide	Diet	Aide	Diet	Aide	Diet	Aide	Diet	Aide
Elementary: 8 years or less		19.0		18.2				100.0						
High School: 1 - 3 years		33.3		36.4						100.0				40.0
4 years		47.6		45.5								100.0		60.0
High School: Diploma		47.6		45.5								100.0		60.0
College: 2 years or less	8.7				66.7									
3 years														
4 years	73.9		83.3		33.3		33.3		100.0		100.0		100.0	
5 or more years	17.4		16.7				66.7							
Associate Degree	8.7				66.7									
Bachelors Degree	78.3		83.3		33.3		66.7		100.0		100.0		100.0	
Master of Arts Degree	13.1		16.7				33.3							
Other Degree														

Table No. 116 Percentage Distribution of Psychiatric Aides in Various Types of Hospitals by Last Year of School Completed and Degree Obtained

LAST YEAR OF SCHOOL COMPLETED	All Hospitals	Types of Hospitals					
		General Short Term Non Profit	General Short Term - City	General Short Term - Federal	Special Short Term Non Profit	Special Long Term Non Profit	Special Long Term - State
Elementary:							
8 years or less	7.6						15.4
High School:							
1 - 3 years	15.4						30.8
4 years	7.6	100.0					7.7
High School:							
Diploma	61.5	100.0		50.0		70.0	53.8
College:							
2 years of less	42.4			50.0		40.0	46.1
3 years	11.6					30.0	
4 years	11.6			50.0		20.0	
5 or more years	3.8					10.0	
Associate Degree							
Bachelors Degree	11.6			50.0		20.0	
Master of Arts Degree	3.8					10.0	
Other Degree							

Table No. 117 Percentage Distribution of Social Workers and Aides In Various Types of Hospitals by Occupational Level Which They May Hope to Attain

OCCUPATIONAL LEVEL	All Hospitals		Types of Hospitals											
			General Short Term Non Profit		General Short Term - City		General Short Term - Federal		Special Short Term Non Profit		Special Long Term Non Profit		Special Long Term - State	
	S.W.	Aide	S.W.	Aide	S.W.	Aide	S.W.	Aide	S.W.	Aide	S.W.	Aide	S.W.	Aide
Present	46.2	71.4	33.3	66.6	33.3		100.0		100.0	100.0	50.0		33.3	
M.S.W.		14.3		16.7										
Supervisor	53.8	14.3	66.7	16.7	66.7						50.0		66.7	

Table No. 118 Percentage Distribution of Medical Record Librarians and Technicians In Various Types of Hospitals by Occupational Level Which They May Hope to Attain

OCCUPATIONAL LEVEL	All Hospitals		Types of Hospitals											
			General Short Term Non Profit		General Short Term - City		General Short Term - Federal		Special Short Term Non Profit		Special Long Term Non Profit		Special Long Term - State	
	Libr.	Tech.	Libr.	Tech.	Libr.	Tech.	Libr.	Tech.	Libr.	Tech.	Libr.	Tech.	Libr.	Tech.
Present	70.6	66.7	50.0		66.7	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
Supervisor of Department	11.8	33.3	12.5	100.0	33.3									
Head of Department In Other Hospital	17.6		37.5											

TABLE NO. 119 Percentage Distribution of Dietitians and Dietary Aids in Various Types of Hospitals by Occupational Level Which they May Hope to Attain

OCCUPATIONAL LEVEL	All Hospitals		Types of Hospitals											
			General Short Term Non Profit		General Short Term - City		General Short Term - Federal		Special Short Term Non Profit		Special Long Term Non Profit		Special Long Term - State	
	Diet	Aide	Diet	Aide	Diet	Aide	Diet	Aide	Diet	Aide	Diet	Aide	Diet	Aide
Present	43.5	95.5	41.6	90.9	66.7	100.0	66.7	100.0		100.0	33.3	100.0		100.0
ADA Dieting														
Department of Nutrition Head	47.8		49.9		33.3				100.0		66.7		100.0	
Other	8.7	4.5	8.3	9.1			33.3							

Table No. 120 Percentage Distribution of Psychiatric Aides In Various Types of Hospitals

by Occupational Level Which They May Hope to Attain

OCCUPATIONAL LEVEL	All Hospitals	Types of Hospitals					
		General Short Term Non Profit	General Short Term - City	General Short Term - Federal	Special Short Term Non Profit	Special Long Term Non Profit	Special Long Term - State
Present	61.6	100.0		100.0		50.0	76.9
Go on to Psychiatric Research	3.9					10.0	
This Position is Temporary	34.5					60.0	23.1

Table No. 121 Extent to Which Educational Background Prepared Social Workers and Aides for the Functions Presently Performed[1]

OCCUPATIONAL BACKGROUND	All Hospital		Types of Hospitals: General Short Term Non Profit		General Short Term - City		General Short Term - Federal		Special Short Term Non Profit		Special Long Term Non Profit		Special Long Term - State	
	S.W.	Aide	S.W.	Aide	S.W.	Aide	S.W.	Aide	S.W.	Aide	S.W.	Aide	S.W.	Aide
High School	2.1	3.6	1.1	4.2							3.8		5.0	
College	16.4	27.1	4.4	31.7	28.3		2.5		5.0		27.5		29.2	
Professional Training														
On-the-Job Training														
Work Experience	34.6	69.3	53.9	64.2	25.0		60.0		5.0	100.0	31.2		14.1	
Other - Graduate School	46.9		40.6		46.7		37.5		90.0		37.5		51.7	

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[1] May not add to 100 percent because of rounding

Table No.122 Extent to Which Educational Background Prepared Medical Record Librarians and Technicians For The Functions Presently Performed[1]

OCCUPATIONAL BACKGROUND	All Hospital		Types of Hospitals											
			General Short Term Non Profit		General Short Term - City		General Short Term - Federal		Special Short Term Non Profit		Special Long Term Non Profit		Special Long Term - State	
	Libr.	Tech.	Libr.	Tech.	Libr.	Tech.	Libr.	Tech.	Libr.	Tech.	Libr.	Tech.	Libr.	Tech.
High School	1.5	11.7		3.3	3.3	22.5			2.5	25.0		12.5	10.0	
College	8.7	8.9	9.4	16.7	12.7		2.5		10.0			15.0	10.0	
Professional Training	37.2	8.3	34.4	25.0	42.3		37.5		55.0		15.0		30.0	
On-the-Job Training	40.6	36.7	53.7			77.5	30.0	100.0	32.5	75.0	85.0		50.0	
Work Experience	12.0	34.4	2.5	55.0	41.7		30.0					72.5		
Other														

[1] May not add to 100 percent because of rounding

Table No.123 Extent to Which Educational Background Prepared Dietitians and Dietary Aides For The Functions Presently Performed[1]

OCCUPATIONAL BACKGROUND	All Hospital		Types of Hospitals											
			General Short Term Non Profit		General Short Term - City		General Short Term - Federal		Special Short Term Non Profit		Special Long Term Non Profit		Special Long Term - State	
	Diet	Aide	Diet	Aide	Diet	Aide	Diet	Aide	Diet	Aide	Diet	Aide	Diet	Aide
High School	6.3	9.8	7.1	10.5			16.7				3.3			20.0
College	40.1	1.1	39.6		25.0		48.3		25.0		47.7		60.0	5.0
Professional Training	29.6	2.3	32.9		41.7		5.0		75.0		23.3			10.0
On-the-Job Training	17.3	73.6	14.6	78.6	8.3	100.0	26.7	100.0		100.0	25.7	40.0	40.0	55.0
Work Experience	3.7	12.3		9.1	25.0		3.3					60.0		10.0
Other	3.0	.9	5.8	1.8										

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[1] May not add to 100 percent because of rounding

Table No.124 Extent to Which Educational Background Prepared Psychiatric Aides

For the Functions Presently Performed[1/]

OCCUPATIONAL BACKGROUND	All Hospitals	Types of Hospitals					
		General Short Term Non Profit	General Short Term - City	General Short Term -Federal	Special Short Term Non Profit	Special Long Term Non Profit	Special Long Term - State
High School	6.5	30.0		5.0		3.0	7.7
College	12.5			37.5		17.5	5.8
Professional Training	0.8					2 .0	
On-the-Job Training	54.5			30.0		46.7	68.5
Work Experience	25.7	70.0		27.5		30.8	18.1
Other							

[1/] May not add to 100 percent because of rounding

TABLE NO. 125 Evaluation of Job Requirements By Percentage For Occupations by Types of Hospitals

OCCUPATIONS	ALL HOSPITALS			
	Right	High	Low	No Answer
Licensed Practical Nurse	58		21	21
Nurses Aide	68		11	20
Occupational and Manual Arts	42		5	53
Physical and Corrective	68	5		26
Recreational	11		5	84
Micro-biology	74			26
Hemotology	58			42
Cytology	37		11	58
Histology	42		16	42
Biochemistry	53		11	37
Blood Bank	63		11	26
Clinical Microscopy	58			42
Radiation Therapist	21		5	74
Radiological	68		5	26
X - Ray	42		5	53
EKG	63		5	32
EEG	42			58
Inhalation	53		11	37
SW and Aides	68			32
Medical Records	74			26
Dietitian and Aide	79		11	11
Psychiatric Aide	11		5	84

Table No. 125 (continued) Evaluation of Job Requirements by Percentage For Occupations by Types of Hospitals

OCCUPATION	General Short Term Non Profit				General Short Term-Profit				General Short Term Federal				Special Short Term Non Profit				Special Long Term Non Profit & State			
	Right	High	Low	N.A.	Right	High	Low	N.A.	Right	High	Low	N.A.	Right	High	Low	N.A.	Right	High	Low	N.A.
Licensed Prac. Nurse	63		25	13	33		33	33	66			33	50			50	66		33	
Nurses Aides	88			13	33		33	33	66			33	100				66			33
Occupational & Manual Arts	25			75	33			66	100							100	75		25	
Physical & Corrective	50	13		38	66			33	100				80			20	100			
Recreational				100				100	33			66				100	33		33	33
Microbiology	75			25	100				100				75			25	25			75
Hemotology	75			25	33			66	100				25			75				100
Cytology	38			63	33		33	33	66			33	50			50				100
Histology	50			50	66		33		33		33	33	75			25			33	66
Biochemistry	63			38	33			66	100				50		50				33	66
Blood Bank	75		13	13	33		33	33	100				100							100
Clinical Microscopy	50			50			33	66	66			33	100				66			33
Radiation Therapist	25			75			33	66	33			66	50			50				100
Radiological	75			25	33		33	33	66			33	100				60			33
X-Ray	50		13	38	66			33	33			66	50			50				100
EKG	50			50	66			33	100				50			50	66		33	
EEG	50			50	33			66	66			33				100	33			66
Inhalation	50		25	25	33			66	100				50			50	33			66
SW & Aides	63			38	33			66	100				100				75			25
Medical Record	75			25	33			66	100				100				75			25
Dietitian & Aides	88			13	66		33		100				100				33		33	33
Psychiatric Aide	25			75				100				100				100			33	66

TABLE NO. 126 Number Of Employees By Sex And Vacancy Ratios For Twenty-One Occupations By Types of Hospitals

OCCUPATION	ALL HOSPITALS			
	Employees			
	Total	Male	Female	Vacancy Ratio
Licensed Practical Nurse	809	21	788	14
Nurses Aide	1810	272	1538	11
Occupational and Manual Arts	37	5	32	3
Physical and Corrective	76	7	64	12
Recreational	9	6	3	
Microbiology	77	12	65	17
Hemotology	97	14	83	12
Cytology	28	1	27	14
Histology	50	4	46	4
Biochemistry	90	27	63	11
Blood Bank	70	14	56	6
Clinical Microscopy	111	60	51	
Radiation Therapist	60	46	14	3
Radiological	168	52	116	12
X - Ray	31	19	12	3
EKG	57	10	47	5
EEG	28	5	23	18
Inhalation	68	60	8	4
SW and Aide	173	20	153	7
Medical Records	48	3	45	10
Dietitians and Aide	531	89	442	9
Psychiatric Aide	68	61	7	18

TABLE NO. 126 Number of Employees By Sex and Vacancy Ratios For
(continued) Twenty-One Occupations By Types of Hospitals

OCCUPATIONS	General Short Term Non Profit				General Short Term City				General Short Term Federal				General Short Term Non Profit				Special Long Term Profit & State			
	Employee Tot	Male	Female	Vac Ratio	Employee Tot	Male	Female	Vac Ratio	Employees Tot	Male	Femle	Vac Ratio	Employees Tot	Male	Femle	Vac Rat	Employees Tot	Male	Femle	Vac Ratio
Licensed Practical Nurse	313	14	299	26.6	112	4	108	7.1	38	2	36	0	95	0	95	55.8	251	1	250	8.8
Nurses Aide	452	68	384	16.6	580	69	511	19.0	272	135	137	1.5	182	0	182		324		324	0.0
Occupational and Manual Arts	5		5	20.0	5	0	5	20.0	10	2	8	30.0	0	0	0	0	17	3	14	35.3
Physical & Corrective	23		23	8.7	13		13	15.4	9	3	6	22.2	19	0	19	0	12	4	8	25.0
Recreational					0	0	0	00.0	2	2	0	00.0	0	0	0	0	7	4	3	00.0
Microbiology	37	6	31	13.5	25	1	24	20.0	3	2	1	00.0	11	3	8	0	1	0	1	100.0
Hemotology	65	4	61	15.4	5	1	4	20.0	6	5	1	16.7	19	3	16	0	2	1	1	00.0
Cytology	16		16	12.5	6	0	6	33.3	2	0	2	00.0	4	1	3	0	0	0	0	00.0
Histology	15	1	14		10	0	10	10.0	7	1	6	15.0	16	1	15	0	2	1	1	00.0
Biochemistry	59	8	51	13.6	6	1	5	16.7	10	6	4	10.0	12	11	1	0	3	1	2	00.0
Blood Bank	32	5	27	9.4	13	5	8	7.7	9	3	6	0.0	16	1	15	0	0	0	0	00.0
Clinical Microscopy	46	7	39	6.5	11	5	6	00.0	4	4	0	00.0	47	42	5	0	3	2	1	00.0
Radiation Therapist	5		5		3	0	3	00.0	22	18	4	00.0	28	26	2	0	2	2	0	00.0
Radiological	94	24	70	6.4	71	25	46	19.7	1	1	0	200.0	2	2	0	0	0	0	0	00.0
X - Ray	10	7	3		17	8	9	5.6	2	2	0	00.0	1	1	0	0	1	1	0	00.0
EKG	31	1	30	3.4	10	0	10	20.0	7	6	1	00.0	7	2	5	0	2	1	1	00.0
EEG	11	2	9		1	0	1	00.0	7	2	5	00.0	7	0	7	00.0	1	1	0	00.0
Inhalation	45	42	3	4.5	12	12	0	00.0	5	5	0	00.0	5	0	5	20.0	1	1	0	00.0
SW and Aide	78	3	75	8.9	4	0	4	50.0	16	5	11	00.0	29	1	28	00.0	46	11	35	6.5
Medical Records	23	0	23	8.7	6	1	5	33.3	7	1	6	00.0	8	1	7	00.0	4	0	4	25.0
Dietitian & Aide	242	3	239	9.9	14	0	14	50.0	87	55	32	11.2	82	0	82	6.1	106	31	75	1.8
Psychiatric Aide	8	7	1		0	0	0	00.0	47	41	6	25.5	0	0	0	00.0	13	13	0	00.0

TABLE NO. 127 Percentage Distribution of Agency Setting Job Requirements For Occupations By Hospital Groupings

OCCUPATION	ALL HOSPITALS				
	Requirements Set By				Percentage of Hospitals that did not answer
	Dept.	Adm.	Both	AccAg	
Licensed Practical Nurse	29	16	16	35	5
Nurses Aides	47	8	26	5	13
Occupational & Manual Arts	11	11	3	33	43
Physical and Corrective	26	11	7	35	21
Recreational	21			5	74
Microbiology	37	8	26	8	21
Hemotology	32	3	11	8	47
Cytology	37		8	8	47
Histology	32	3	14	26	26
Biochemistry	42	3	18	30	8
Blood Bank	21	1	23	24	31
Clinical Microscopy	58	5	11	4	22
Radiation Therapist	37		11	5	47
Radiological	24	26	18	19	13
X - Ray	26		21	5	47
EKG	47	18	11	12	11
EEG	16	21	11	16	37
Inhalation	33	16	8	19	24
SW and Aide	12	26	21	21	19
Medical Records	18	11	26	26	19
Dietitians and Aide	28	18	21	17	15
Psychiatric Aide	3	5	5	16	71

TABLE NO. 127 Percentage Distribution of Agency Setting Job Requirements
(continued) For Occupations By Hospital

OCCUPATIONS	General Short Term Non Profit				General Short Term City				General Short Term Federal				Special Short Term Non Profit				Special Long Term Non Profit & State			
	Dept	Adm	Both	AccAg	Dept	Adm	Both	AccAg	Dept	Adm	Both	AccAg	Dept	Adm	Both	AccAg	Dept	Adm	Both	AccAg
Licensed Prac.Nurse	19		25	44		67	33		100				75			25		33		67
Nurses Aide	50		50			17	33		66			33	50	50			67			
Occ. & Manual Arts		13	8	4				100	20			60					40	10		30
Physical/Corrective		13	17	33		50		50	33			67	100				63			38
Recreation									100								50			50
Microbiology	25		50	13	25	13	50	13	75				75					33		
Hemotology	38		25	13	33	17		17	50				25							
Cytology	13		19	4	100				50			50	100							
Histology	13		34	4	75	13		13	33			33	100							100
Biochemistry	25		43	20	50	25		25	100				75			25				100
Blood Bank	13		42	46	33	17	33	17	75			25	50			50				
Clinical Microscopy	25		25		50	25		25	100				63	25		13	100			
Radiation Therapist	25						67	33	100				100							
Radiological	25	13	33	29	33		22	44		50			75			25		100		
X - Ray	38		38				50	50					100							
EKG	38	25	25		67	17		17	33			33	100				33	33		33
EEG	25		25	13		50		50				50	50					100		
Inhalation	31	13	21	23	33	67			100							100	100			
SW & Aide		13	50	25		75		25	50	50			38	50		13	20	20		60
Medical Records	20		50	30		50	33	17	75	25			50			50	25	25		50
Dietitian & Aide	33		50	17		88		13	50	50			63			38	20	40		40
Psychiatric Aide		13	13						50	50										100

TABLE NO. 128 Percentage Distribution of Length of Time in Which Job Requirements have Been In Effect For Twenty-One Occupations by Hospitals Groupings

OCCUPATION	ALL HOSPITALS			
	Less than 5 years	5-10 years	Over 10 Years	No Answer
Licensed Practical Nurse		6	47	43
Nurses Aide	21		37	42
Occupational & Manual Arts	11	5	16	68
Physical & Corrective	16	5	5	74
Recreational	5		11	84
Microbiology		5	37	58
Hemotology		5	26	63
Cytology	11		16	74
Histology		5	11	79
Biochemistry			32	68
Blood Bank	5	5	26	32
Clinical Microscopy	5		21	74
Radiation Therapy	16			84
Radiological	11	5		84
X - Ray	5		5	89
EKG	5	5	11	79
EEG	5		5	89
Inhalation	21	16	11	53
SW & Aide	11		26	32
Medical Records		5	11	84
Dietitions & Aide		5	42	52
Psychiatric Aide			5	95

Table No. 128 Percent Distribution of Length of Time in Which Job
(continued)
Requirements Have Been in Effect for Twenty-One Occupations
by Hospital Groupings

OCCUPATION	General Short Term Non Profit				General Short Term City				General Short Term Federal				Special Short Term Non Profit				Special Long Term Profit & State			
	Less than 5 yr.	5-10 yr.	Over 10 yr.	N.A.	Less than 5 yr.	5-10 yr.	Over 10 yr.	N.A.	Less than 5 yr.	5-10 yr.	Over 10 yr.	N.A.	Less than 5 yr.	5-10 yr.	Over 10 yr.	N.A.	Less than 5 yr.	5-10 yr.	Over 10 yr.	N.A.
Licensed Prac. Nurse			50	50		33	33	33			33	66				100			100	
Nurses Aides	25		38	38			66	33	33		33	33	50			50			33	66
Occupational & Manual Arts				100		33		66	33		33	33				100	33		66	
Physical & Corrective	13			88		33		66	33			66				100	33		33	33
Recreational				100				100			33	66				100	33		33	33
Microbiology			50	50			40	60		25	50	25				100			25	75
Hemotology			50	50				100	20	20	20	40				100				100
Cytology	25		13	63				100			66	33				100				100
Histology			13	88				100		33	66					100				100
Biochemistry			38	63				100			100					100				100
Blood Bank	13		38	50				100		50	50					100				100
Clinical Microscopy			25	75				100	33		33	33				100			33	66
Radiation Therapist	25			75	33			66				100				100				100
Radiological	13			88	33			66			33	66		33		66				100
X-Ray	13			88				100			33	66				100				100
EKG	13			88			33	66		33	33	33				100				100
EEG	13			88				100			33	66				100				100
Inhalation	25	25	13	38	66			33	33		33	33				100				100
SW and Aide	25		25	50				100			66	33				100			33	66
Medical Records			13	88				100		33	33	33				100				100
Dietitians & Aide		13	88					100			33	66				100				100
Psychiatric Aide				100				100			33	66				100				100

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